



Assessment of Sexual Behaviours and Sexual Networks of Injecting Drug Users in Delhi and Imphal, India

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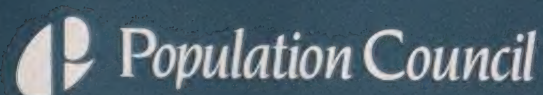
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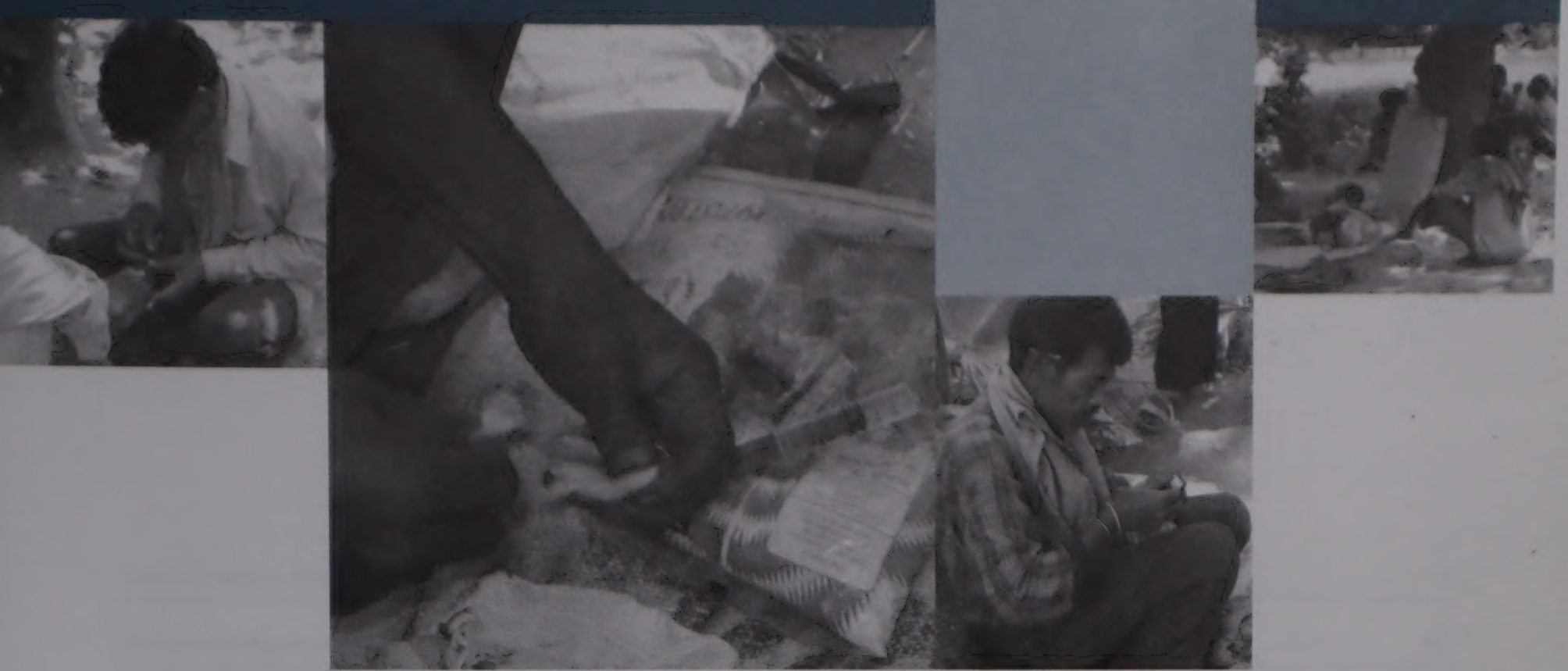
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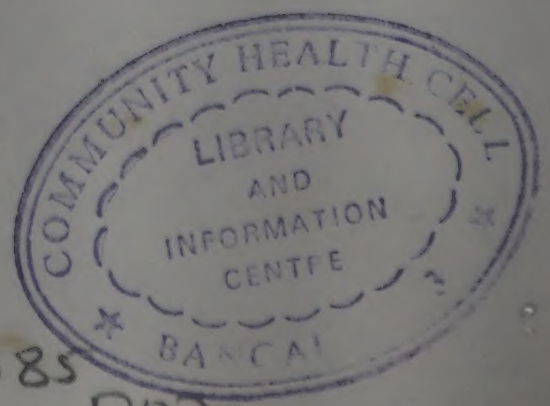


Assessment of Sexual Behaviours and Sexual Networks of Injecting Drug Users in Delhi and Imphal, India

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Abbreviations

BCC	Behaviour change communication
CI	Confidence intervals
IDU	Injecting drug user
IEC	Information, education, and communication
IQR	Inter quartile range
MSM	Men who have sex with men
MSW	Male sex worker
NGO	Non-governmental organisation
NSEP	Needle and syringe exchange programme
RDS	Respondent driven sampling
SASO	Social Awareness Service Organisation

Executive Summary

Background

The practice of injecting drug use has been spreading to different parts of India since the early 1980s. Associated with this spread has been an increase in HIV prevalence rates in injecting drug user (IDU) populations. (Dorabjee and Samson 2000; Eicher et al. 2000) IDUs engage in both risky injection and sexual practices that increase the risk for HIV transmission. (Sarkar et al. 1995; Panda et al. 2000) While risky injection practices are well understood, there is limited understanding of IDUs' sexual behaviours and social networks. This information is extremely important as IDUs can act as a bridge for transmission of HIV infection to non-injecting and non-drug using partners. The Population Council conducted a study to explore patterns of risky sexual behaviours, sexual network characteristics, and drivers of high-risk behaviours of IDUs in Delhi and Imphal.

Study Methodology

The study was undertaken in two cities, Imphal and Delhi, in one high and one low HIV prevalence state in India, Manipur and Delhi, respectively. Study sites were purposively selected based on existing harm reduction programmes and IDU networks in these cities. One non-governmental organisation in each city served as the study partner for this research: Sahara in Delhi and SASO in Imphal.

Researchers from the Population Council conducted a cross-sectional study with current IDUs between September and December 2006. Current IDUs, who had used non-prescription intravenous drugs in the past six months and were over 16 years of age, were interviewed about drug use and injecting behaviours, knowledge of HIV/AIDS, sexual behaviours, and sexual networks, including detailed information about their sex partners.

Current IDUs were recruited into the study using Respondent Driven Sampling (RDS). The RDS method, whereby study participants are asked to recruit their IDU peers, is used in research with hard-to-reach or hidden populations such as IDUs, and it provides estimates that can be generalizable to the larger reference population of IDUs in the respective cities. (Heckathorn 1997)

Characteristics of IDU Population in Delhi and Imphal

A total of 800 current IDUs were interviewed in each city, the vast majority of whom were males (783 in Delhi and 766 in Imphal). The median age for male and female IDUs was similar at both sites (30 years). Important differences were observed in education levels, living conditions, and marital and employment status of IDUs across the two sites. Almost half the male and more than three-fourths of female IDUs from

Delhi reported no education. By contrast, three-quarters of male and half of female IDUs from Manipur reported at least 6 to 12 years of education. Additionally, male IDUs from Delhi represented a largely street-based (68 percent) and single (57 percent) population compared to respondents from Imphal, who reported living at home (98 percent) and were more likely to be married or cohabiting (59 percent). Female IDUs were mostly married (15/17) in Delhi and mostly widows (15/34) in Imphal. The majority of male IDUs from Delhi were employed, primarily as rag pickers, while less than half the male IDUs from Imphal were employed. Almost all the female IDUs from Delhi were unemployed; one-third were unemployed in Imphal.

As there were few female IDUs in the study, this summary primarily focuses on findings from male IDUs.

Key Findings

Distinctly different patterns of drug use observed in Delhi and Imphal.

IDUs in Delhi reported primarily injecting pharmaceutical agents such as Buprenorphine (93 percent), tranquilizers (83 percent), and antihistamines and sedatives (91 percent), while IDUs in Imphal primarily injected heroin (79 percent). IDUs from Delhi reported multiple injections per day compared to those from Imphal (61 percent vs. 27 percent). Additionally, injecting drug use behaviours appear to be a more recent phenomenon in Delhi compared to Imphal. A quarter of the IDUs in Delhi (26 percent) had been injecting for less than one year and a further 50 percent had been injecting for between 1–5 years. By contrast in Imphal, nearly 60 percent had been injecting for at least six years.

Needle sharing is commonly practiced.

A high proportion of IDUs in Delhi (41 percent) and Imphal (60 percent) reported sharing needles/syringes with others. IDUs from Imphal were more likely than those from Delhi to report high-risk injecting practices such as using a needle used by someone else (43 percent vs. 33 percent); lending a needle to someone else after using it (50 percent vs. 38 percent); sharing injection equipment (71 percent vs. 28 percent) and drawing up drug solution from a common container (70 percent vs. 55 percent).

HIV, Hepatitis B and C related knowledge and testing very low.

Almost three-quarters of the IDUs in Delhi (74 percent) had not heard of HIV/AIDS and of those who had heard of HIV/AIDS only 37 percent of them had been tested for HIV infection. In Imphal although nearly all (98 percent) had heard of HIV/AIDS only 49 percent had undergone testing, highlighting a gap in prevention programmes. Awareness of Hepatitis B and C was also extremely low among IDUs. Sixty-five

percent of IDUs in Imphal and 14 percent in Delhi had heard of Hepatitis B and 46 percent and nine percent had heard of Hepatitis C in the two cities, respectively. Of those who had heard of hepatitis, less than a third had been tested for these infections.

Sex with commercial partners was common in Delhi, while regular partnerships were more the norm in Imphal.

Sixty-four percent of male IDUs in Delhi and 54 percent in Imphal were sexually active in the last 12 months. While the majority of the sexually active male IDUs had sex with female partners in both Delhi (90 percent) and Imphal (95 percent), important differences in sexual behaviours were evident from the types of partners they reported. Over half of the IDUs in Delhi (58 percent) who had sex with a female partner in the last 12 months, did so with a commercial partner whereas the majority (82 percent) in Imphal did so with a regular partner.

About 20 percent of male IDUs in Delhi reported sex with male partners, the majority (78 percent) of whom paid for sex with other men.

Condom use markedly low with all types of sex partners.

Self-reported consistent condom use with regular partners in the last 12 months was extremely low in both Delhi (8 percent) and Imphal (19 percent). Although self-reported consistent condom use with commercial sex partners was higher (46 percent in Delhi and 67 percent in Imphal) than with regular and non-regular partners (27 percent in Delhi and 38 percent in Imphal), it was still extremely low.

Multiple sex partnerships found to be prevalent.

Among sexually active male IDUs, multiple partnerships were common. In the previous 12 months, 38 percent of sexually active male IDUs in Delhi had 2–5 female sex partners and slightly over ten percent had more than six female partners. Although multiple partnerships were less common in Imphal, 21 percent of sexually active male IDUs reported having had at least 2 female sex partners in the last 12 months.

Concurrent sex partnerships were found to be prevalent particularly among male IDUs in Delhi.

Concurrency has been shown to be an important factor in the spread of HIV (Morris and Kretzschmar 1997). Among male IDUs who had more than one partner in the last 12 months, a substantial percentage (36 percent in Delhi and 24 percent in Imphal) had concurrent partnerships, defined as sexual relationships that overlapped in time. Further, nearly half of the concurrent relationships in Delhi (46 percent) and a third in

Imphal (33 percent) were unprotected, that is condoms were not used at last sex with any of the concurrent sexual partners.

Risky patterns of sexual mixing observed.

This study found sexual mixing patterns that can speed the spread of HIV and STIs beyond the high-risk group of IDUs. The most important type of sexual mixing observed that has major implications for the spread of HIV was between injecting and non-injecting partners. In both cities the vast majority of male IDUs with regular partners reported that their partners were non-injectors (97 percent). Similarly, three-quarters of male IDUs who had non-regular partners and two-thirds of those who had commercial sex partners reported that their partners were non-injectors.

Other types of sexual mixing were also observed. Five percent of male IDUs in Delhi and 12 percent in Imphal who had two or more partners in the last 12 months reported having at least one non-regular or commercial female partner in addition to a regular female partner. Sexual mixing across sexes and across age groups was also seen. A small subset of sexually active male IDUs in Delhi (7 percent) engaged in sex with both male and female partners in the last 12 months. A moderate proportion of sex partners in Delhi (27 percent) and Imphal (12 percent) were at least 10 years younger than the respondents.

Such dissortative sexual mixing (i.e., ties between non-like groups) represents a higher-risk sexual behavioural pattern, as there is a potential to bridge between higher and lower risk groups.

Program Implications and Recommendations

The exploratory study, conducted in one high and one low HIV prevalence state, suggests that two distinctly different drug use patterns, living conditions and sexual risk behaviour are shaping the HIV epidemic in the two cities. These differences require a varied approach in addressing HIV-prevention in these two populations. Wider interventions to reach the unstable and homeless IDUs of Delhi and to retain them within targeted intervention programmes are needed, while interventions in Imphal must take into account that the target population is somewhat educated, married or co-habiting, and living in proper housing. Additionally, different counselling methods may be more effective for rehabilitation with recent injectors (e.g., IDUs in Delhi) versus longer term injectors who may have more severe addictions (e.g., IDUs in Imphal). Overall information, education and communication (IEC) should emphasise consistent use of sterile needles, proper cleaning and disposal techniques.

Sexual risk behaviours among IDUs with female partners suggest high rates of multiple partners, sex with commercial partners, low condom use with all types of partners and concurrent relationships. Male-to-male sex was characterized by multiple partners, high rate of partner change and very low condom use.

IEC materials and prevention interventions need to emphasise partner reduction and consistent condom use with all type of partners (regular, non-regular and sex workers) for all types of sex (vaginal, anal and oral sex).

Although the focus of targeted interventions has been HIV prevention, the study reveals that very few IDUs have been tested for HIV infection. This impedes prevention efforts and access to treatment and care for HIV positive IDUs. It is imperative that prevention programmes emphasise and facilitate HIV testing in this population. Additionally, given that Hepatitis B and C infections are common among IDUs, both of which impact the outcome of HIV infection and subsequent treatment with ART, IDU prevention efforts need to be widened to include testing for Hepatitis B and C and the provision of Hepatitis B vaccination for IDUs.

Overall, a comprehensive prevention approach (addressing risky injection practices with risky sexual behaviour) that is tailored to the needs of different IDU populations is needed. A uniform one-size-fits-all prevention programme may not be effective across the country. Similar research is recommended for other cities in India to explore differences in these behaviours that may require a different prevention approach.

Proposed Behaviour Change Communication Strategies

Behaviour change communication (BCC) strategies outlined here are based on discussions with current IDUs, program managers and outreach workers. IDUs at both sites expressed a preference for face-to-face contact with health workers and peers for effective communication; therefore, increased interpersonal contact and outreach activity with IDU populations is recommended. Key messages should focus on increasing awareness of HIV in combination with reduction in risky sexual and injecting behaviours. A peer outreach programme with a focus on experience sharing and peer role modelling, using a cadre of peer educators (ex-IDUs) who have undergone advanced training in communication methods is proposed.

Findings suggest a need for widening the focus of IEC materials and BCC activities from only providing information on transmission of HIV to an active process involving components for self-risk assessment to address the IDUs' misplaced sense of lack of risk between unsafe injection practices and those arising from risky sexual behaviours; encouraging knowledge of HIV status and repeated testing; life skills activities and outreach to address decision making skills and strengthen their ability to withstand peer pressure; and purchasing, accessing and using condoms on a regular basis.

Expanding awareness and prevention interventions to address secondary stakeholders such as law enforcement agencies, parents and policy makers are needed. Interventions targeting partners of IDUs, key stakeholders in HIV prevention, warrant consideration.

Introduction

The practice of injecting drug use has been spreading to different parts of India since the early 1980s. Associated with this spread has been an increase in HIV prevalence rates in injecting drug user (IDU) populations.

Research shows that sharing of needles poses multiple risks including transmitting HIV infection to uninfected individuals; re-infection with newer HIV viral strains in HIV-infected individuals; and super-infection with other viruses such as hepatitis B and C. There is evidence to show that IDUs have multiple sexual partners and condom use in these populations is low (Population Council, 2004; (Panda et al. 1998; Eicher et al. 2000; Panda et al. 2000). Risky sexual behaviours also enhance the risk of transmission of HIV and other viruses to the uninfected sexual partners of IDUs (who may or may not be drug users), thereby spreading infection into the general population. While studies have established that IDUs are sexually active and have sex with injecting and non-injecting partners (Panda 2000), there is limited understanding of their sexual behaviours and social networks. Why do risky sexual behaviours take place? What is the context in which these behaviours occur? What are the characteristics of the sex partners of IDUs? And what factors facilitate high-risk sexual behaviours within their social networks? This information is extremely important as the transmission of HIV into the general population depends on risky sexual

practices of IDUs with non-injecting drug users who act as a 'bridge' for facilitating the transmission of infection. Research also shows that interventions designed to change sexual behaviours of IDUs have been less successful than those designed to change their drug injecting behaviours (Des Jarlais 1995). For example, IDUs in Manipur who knew their HIV positive status did not translate this knowledge into safer sexual behaviours (Sarkar 1995).

An understanding of the social context and social network characteristics is necessary to guide the development of behaviour change strategies that can go beyond individual characteristics into a higher level of influence. There is a growing recognition of the need for developing comprehensive interventions for HIV prevention to address both injecting drug use and high-risk sexual behaviours.

Evidence gathered from a representative sample of current IDUs in Delhi and Manipur provide information on sexual behaviour and sexual networks that can be used by programmes to design sustainable behaviour change interventions in this population.

Objectives

The research team studied IDUs in Delhi and Imphal to study the sexual networks and sexual risk behaviours. Objectives of the study were:

- To explore patterns of risky sexual behaviour among IDUs.
- To examine the sexual network characteristics and drivers of high-risk behaviour.

The findings from this study will be used to identify strategies for behaviour change. The team aims to explore acceptability of proposed strategies for behaviour change through group discussions with current IDUs.

Methods

Study Design

The study employed a cross sectional design. Current injecting drug users were interviewed face-to-face between September and December 2006 using a structured survey questionnaire.

Study Sites and Research Partners

The study was undertaken in two cities, Imphal and Delhi, in one high and one low HIV prevalence state in India, Manipur and Delhi respectively. The contrast allows for differences in social and behavioural characteristics that influence the HIV epidemic in this population to be explored. Study sites in Delhi and Imphal were purposively selected based on existing harm reduction programmes and IDU networks in these cities. One NGO in each city served as the study partner for this research.

Sahara, Centre for Residential Care and Rehabilitation, a Delhi-based NGO, provides services for IDUs such as de-addiction, medical care and needle exchange programmes. Sahara has outreach in eight major locations in Delhi. Currently, Sahara reaches around 15,000 IDUs in the city. SASO (Social Awareness Service Organisation), an NGO located in Imphal, Manipur provides services for HIV-positive and HIV-negative injecting and non-injecting drug users. Both partners have close working relationships with the State AIDS Control Society.

Interviews were conducted at two sites in each city: Daryaganj and Jahangirpuri in Delhi,

where Sahara has ongoing operations and at SASO's drop-in centres at RIMS Road and Checkon in Imphal.

Study Population and Recruitment

Inclusion criteria for participation in the study consisted of being a current IDU (i.e. have used non-prescription intravenous drugs in the past 6 months), over 16 years of age, and able to provide consent.

A total of 1,600 current IDUs (800 in Delhi; 800 in Imphal) were recruited into the study using Respondent Driven Sampling (RDS). In Delhi, 783 male and 17 female IDUs were interviewed and in Imphal 766 male and 34 female IDUs were interviewed.

The RDS sampling method is used in research with hard-to-reach or hidden populations such as IDUs and men who have sex with men (MSM) for whom a sampling frame is difficult to obtain. It is a form of chain-referral sampling which combines 'snowball sampling' (getting individuals to refer those they know, who in turn refer those they know and so on) with a mathematical model that weights the sample to compensate for the fact that the sample was collected in a non-random way (Thompson and Seber 1996; Heckathorn 1997; Thompson and Frank 2000; Salganik and Heckathorn 2004). RDS can provide a representative sample of an otherwise hidden population. Analysis of data collected using RDS Analysis Tool version 5.6 (RDSAT), a statistical software for RDS data,

provides population based estimates that can be used in programme planning.

'Seeds' or index cases to initiate the recruitment process were selected purposively. The selection was made in consultation with partner NGOs, based on salient socio-metric characteristics of these persons, mainly, knowing many IDUs and being well integrated in the IDU community. The study started with one male and one female seed at both the sites (Delhi and Imphal) with subsequent addition of one female and two male seeds in Delhi and one male and one female seed in Imphal. Figure 1 illustrates the recruitment pattern as it occurred in Delhi and Imphal. Each participant was given three study coupons to recruit three other male or female IDUs who they know. Participants were given Rs 60 for completing the survey and Rs 40 for each eligible recruitee.

Over 4,600 coupons were distributed between the two sites (2,301 and 2,376 in Delhi and Imphal, respectively). Seventy-one IDUs returning with coupons in Delhi and 22 in Imphal were found ineligible during the screening process and were not interviewed. Six coupons from each site were reported lost. Six individuals from Delhi tried to enter the study twice and were dropped. Recruitment continued until 800 eligible IDUs per site was achieved.

A qualitative component was conducted to help explain quantitative findings. In-depth interviews were conducted with 31 current IDUs in the two cities (13 males and 4 females in Delhi and 12 males and 2 females in Imphal). Current IDUs over 16 years of age were recruited purposively based on a history of being sexually active and

having multiple sexual partners (two or more partners in the last 12 months).

Data Collection

A structured survey questionnaire was used for the quantitative component. The questionnaire was harmonised with the India Behavioural Surveillance Survey with regard to reporting reference periods and key variables to provide comparable data on key indicators. Data was collected on socio-demographic indicators, knowledge of HIV/AIDS, drug use and injecting behaviours, sexual behaviours, and sexual networks. Survey questions were translated into Manipuri and Hindi and back translated to English.

Interviews were conducted in Hindi and Manipuri by trained research interviewers, most of whom were former IDUs, thus familiar with issues around injecting drug use. Interviews were carried out on handheld computers (DELL Axim X51) using Perseus 7.0.044 software. Data from the palmtops was uploaded on to a central computer at the end of each day. Uploaded data was converted into MS-access dataset for storage and management. Data collection for the quantitative phase took place between September and December, 2006.

In-depth interviews focused on obtaining an understanding of sexual networks, partner selection, preventive behaviours, and the links between behaviours and HIV risk. Interviews were conducted in Hindi and Manipuri using an interview guide. Interviews were recorded on tape and transcribed by experts in social research. The qualitative phase was conducted in January and February, 2007.

Figure 1:
Recruitment chains in Delhi (a) and Imphal (b).



To explore acceptability of Behaviour Change Communications strategies (BCC) and key messages, a BCC consultant conducted four group discussions with active IDUs in Delhi and Imphal in February 2007. Key informant interviews were also undertaken with program managers.

Ethical approval for the study was obtained from the Institutional Review Board of the Population Council. All study participants provided written informed consent.

Definitions

For the purpose of this study active injecting drug use was defined as having injected non-prescription drugs at least once within the past 6 months.

Sexual activity was defined as having sexual intercourse (vaginal or anal) at least once in the past 12 months. With regard to sexual behaviours, a regular partner was defined as a partner who the respondent was married to or cohabited with. A commercial/sex worker partner was someone the respondent had transactional sex with in exchange for money, gifts or drugs. A non-regular or casual partner was defined as a partner the respondent was not living with and was not a commercial.

Information on condom use was elicited for each type of sex partner. Consistent condom use was defined as condom used at every sexual act during the reporting reference period.

Data Analysis

Quantitative data was analysed at two levels. Survey data was analysed with the RDS data analysis

package (Respondent Driven Sampling Analysis Tool (RDSAT) v. 5.6.0). This provided population-based estimates with 95 per cent confidence intervals for drug use, injecting and sexual behaviour and knowledge indicators. Sexual network data was analysed using SPSS software version 12.0. The analysis focused on a descriptive assessment of partner characteristics, sexual mixing and concurrency.

Qualitative data from in-depth interviews was analysed using ATLAS.ti version 5.0. Codes were identified and agreed upon by the researchers after reading the first four interviews and coding manually. Coding was then undertaken using ATLAS.ti software. Key informant interviews were manually analysed using methods of content analysis.

Limitations of the Study

The study was conducted in urban cities of Delhi and Imphal. Thus the findings from this study may not be generalisable to rural IDUs. The results however, provide important insights and directions into urban IDU behaviour, which could be used for broad programmes and policy for IDUs.

The study used self-reported behaviours for high-risk injection practices, sexual behaviours and condom use. Reviews of validity and reliability of HIV research have found that self-reported sexual behaviour data are fairly consistent and partner reports on sexual acts and condom use are fairly congruent (Fenton et al. 2001; Wellings and Cleland 2001; Padian et al. 1995; Ellish et al. 1996; Stone et al. 1999; Obermeyer 2005)

Results

Sociodemographic Characteristics of the Sample

A total of 1,600 current injecting drug users were interviewed in Delhi ($n = 800$) and Imphal ($n = 800$). The vast majority of IDUs were males across both sites; there were 783 males (including 9 self-identified transgender individuals) in Delhi and 766 males in Imphal. Table 1 presents socio-demographic characteristics of the male IDUs by site. As there were very few female participants, population estimates using RDSAT were not available; the results for female respondents are presented as simple proportions in this section.

The median age for male IDUs (31 in Delhi and 30 Imphal) and female IDUs (30 at both sites) was similar at both sites (Table 1).

Important differences were observed in the education levels and marital status of male IDUs across the two sites. Almost half the male and more than three-quarters (14/17) of female IDUs from Delhi reported no education. By contrast, three-quarters of male and half of the female (18/34) IDUs from Imphal reported at least 6 to 12 years of education. More male IDUs in Delhi were single

(57 percent vs. 47 percent) and fewer were married or cohabiting (30 percent vs. 59 percent) compared to male IDUs from Imphal. Female IDUs were mostly married (15/17) in Delhi and mostly widows (15/34) in Imphal.

IDUs from Delhi represented a largely street-based population compared to respondents from Imphal. Almost three-quarters of the male IDUs from Delhi reported living on the streets while nearly all the male IDUs from Imphal reported living at home. Similarly, among female IDUs in Delhi, 14/17 reported living on the streets while 32/34 female IDUs in Imphal reported living at home.

The majority of male IDUs from Delhi were employed and most earned their living as daily wage labourers, mostly rag picking. Less than half the male IDUs from Imphal reported being employed. Almost all (16/17) of the female IDUs from Delhi were unemployed and 12/34 female IDUs in Imphal were unemployed.

Findings for male IDUs are presented in this section. Because there were few female participants, results for female IDUs are presented in brief at the end of the report.

Table 1:
Sociodemographic characteristics of male IDUs in Delhi and Imphal

	Delhi	Imphal
	Population estimates	Population estimates
	(95% CI)* N = 783	(95% CI)* N = 766
Median age [IQR]**	31 [25, 39]	30 [27, 35]
Age		
≤ 25	29.6 (24.5–35.6)	20.5 (16.6–24.8)
26–35	44.0 (37.0–48.8)	55.5 (50.5–60.4)
36+	26.3 (22.5–32.0)	24.0 (19.4–28.9)
Education		
Never attended school	45.5 (39.4–51.3)	4.9 (3.2–7.1)
1–5 years	33.5 (27.4–39.9)	6.6 (4.5–9.3)
6–12 years	20.8 (16.5–25.2)	74.4 (70.8–79.0)
Graduate or higher	0.4 (0.0–1.4)	14.1 (10.1–16.9)
Marital status		
Currently married/Co-habiting	30.1 (24.3–36.8)	48.9 (43.2–53.5)
Never married	56.5 (49.4–62.2)	46.5 (41.9–52.0)
Divorced/Separated/Widow	13.4 (9.3–19.6)	4.6 (3.1–6.5)
Current living situation		
Home-based	29.1 (22.4–37.7)	97.9 (95.7–99.4)
Care home/shelter	1.8 (0.7–3.4)	0
Street-based	68.2 (59.5–75.0)	0
Other	0.8 (0.2–1.9)	2.1 (0.6–4.3)
Employment status		
Employed	92.9 (90.7–94.8)	49.7 (44.8–55.0)
Not employed	7.1 (5.2–9.3)	50.3 (45.0–55.2)
Type of employment	n = 688	n = 341
Formal sector	2.7 (1.4–5.3)	28.0 (17.6–37.6)
Daily wage labourer	11.3 (7.7–14.9)	26.6 (16.4–37.9)
Self-employed	82.5 (78.1–87.0)	44.4 (34.9–56.5)
Other	3.5 (1.2–5.3)	0.9 (0.0–1.8)

* CI: Confidence Interval
** IQR: Inter quartile range

Drug Use Behaviours of Male IDUs

Respondents were to report on drugs they had injected over the past one-month period. The pattern of drug use was different between the two sites. IDUs in Delhi reported a higher use of pharmaceutical agents, which were often used in combination. Buprenorphine (an opioid medication used for detoxification), tranquilizers (e.g., Diazepam, Nitrazepam), antihistamines (e.g., Avil) and sedatives (e.g., Phenargan) were used most often. By contrast IDUs in Imphal reported using heroin and pain killers (e.g., dextropropoxyphene, Spasmoproxyvon) (Figure 2). Amphetamine and cocaine use was reported only in Delhi by less than one percent of IDUs. The use of crack was not reported.

The majority of IDUs (> 70 percent) at both sites had been using drugs (injecting and non-injecting) for six years or more (Table 2). Initiation of injecting drug use was more recent in Delhi, where a quarter of the IDUs started injecting within the past one-year period and slightly less than a quarter were injecting for six years or more. By contrast in Imphal less than one-tenth had been injecting for under a year and more than half of the IDUs had been injecting for over six years.

Injecting behaviours and alcohol use

Designing effective prevention strategies for IDUs requires an understanding of injecting behaviours. IDUs were asked about the places where they usually injected drugs, the frequency of injecting

Figure 2:

Types of drugs injected by male IDUs over the last one month in Delhi ($n = 773$) and Imphal ($n = 748$)

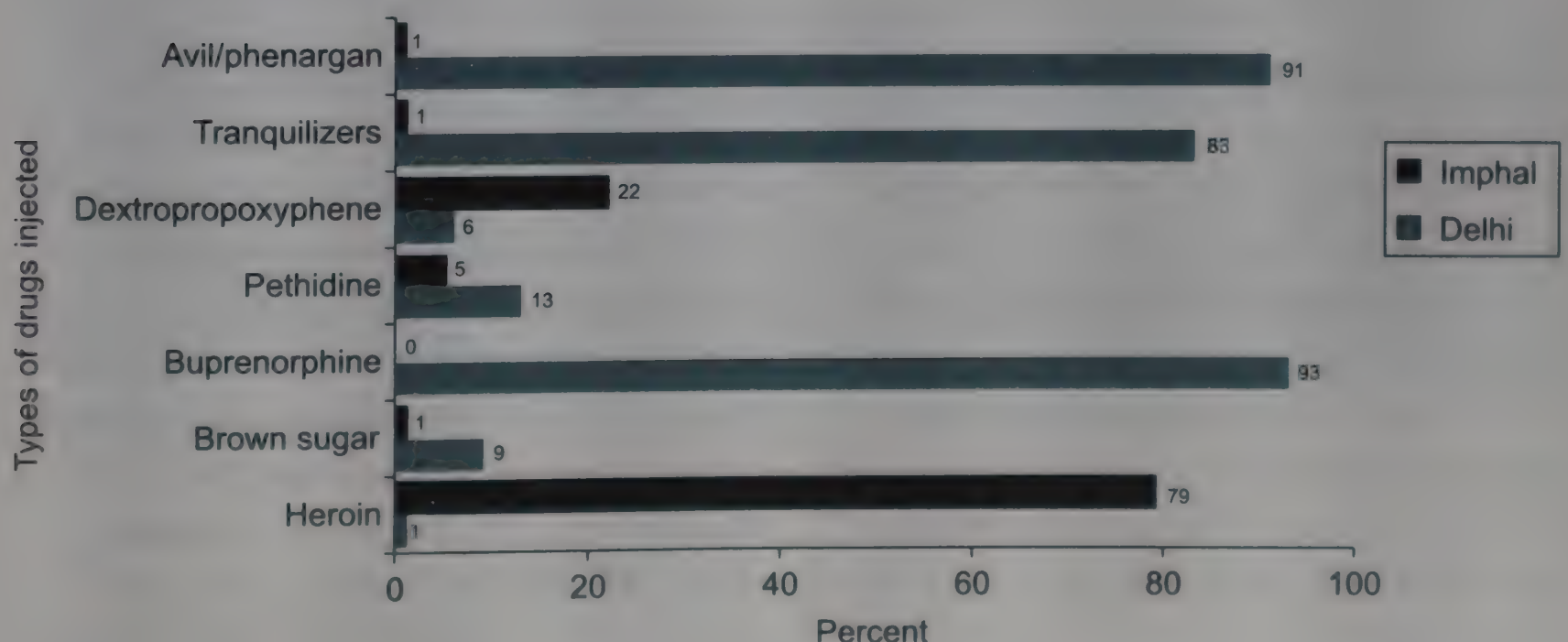


Table 2:
Drug use behaviours of male IDUs in Delhi and Imphal

	Delhi Population estimates (95% CI) <i>n</i> = 773	Imphal Population estimates (95% CI) <i>n</i> = 748
Duration of drug use (injecting or non-injecting)		
< 1 year	6.2 (2.4–11.5)	1.3 (0.5–2.5)
1–5 years	23.1 (18.1–30.1)	20.1 (16.3–24.3)
6–10 years	28.5 (23.0–32.8)	27.9 (23.6–32.0)
11+ years	42.2 (36.3–48.1)	50.6 (45.5–55.6)
Duration of injection drug use		
< 1 year	25.6 (20.1–32.0)	7.0 (4.8–9.6)
1–5 years	49.6 (43.8–55.6)	35.6 (31.0–40.6)
6–10 years	19.5 (15.4–23.6)	23.5 (19.5–27.6)
11+ years	5.3 (3.5–7.4)	33.9 (28.7–38.8)
Age at first drug injection (years)		
< 15	2.3 (1.1–3.7)	5.8 (3.8–9.0)
16–20	18.7 (14.4–23.5)	34.6 (29.3–38.2)
21–25	26.8 (21.8–31.7)	35.9 (31.6–41.4)
26–30	20.9 (15.0–26.7)	15.7 (12.3–19.2)
31+	31.3 (26.8–37.3)	8.0 (5.7–10.8)

and the use of alcohol with drugs. Important differences in injecting behaviours were observed between sites. The majority of IDUs from Delhi reported injecting drugs in public places and on streets, while the majority from Imphal reported injecting within the confines of their homes (Table 3). IDUs from Delhi were more likely to report multiple injections per day compared to those from Imphal (61 percent vs. 27 percent). By contrast, a third of the IDUs from Imphal reported injecting 1 to 4 times per month.

Alcohol use while taking drugs could be associated with an increase in high-risk injection and needle sharing practices. A higher proportion of IDUs from Imphal reported ever drinking alcohol while taking drugs compared to those from Delhi (37 percent vs. 23 percent respectively). The majority of IDUs at both sides reported consuming alcohol infrequently or sometimes (Table 3). The two most commonly cited reasons for drinking alcohol with drugs was to enhance intoxication from drugs (64–74 percent) and IDU peer influence (23–21 percent).

Table 3:
Injecting behaviours and alcohol use among male IDUs in Delhi and Imphal

	Delhi Population estimates (95% CI) <i>n</i> = 773	Imphal Population estimates (95% CI) <i>n</i> = 748
Most frequently reported venues of drug injection*		
In own home	14.3 (9.2–20.0)	69.3 (64.1–74.4)
In another injector's home	5.2 (2.9–7.9)	25.3 (21.1–28.7)
Dealer's home	6.0 (3.9–8.7)	39.2 (34.9–44.1)
An abandoned building	9.1 (6.7–12.2)	2.2 (1.1–3.6)
Public places (hospital, cinema, bus terminal)	21.3 (16.6–24.9)	5.2 (3.3–7.3)
Public toilets	17.5 (13.0–23.2)	5.7 (3.8–8.2)
Prison	—	—
Street/Park/Shop/Café/bar	44.7 (38.5–50.1)	6.2 (4.3–8.2)
Frequency of injection in last 1 month		
Never	1.9 (0.6–2.8)	8.7 (5.9–11.0)
1–3 times/month	9.9 (7.1–12.8)	25.9 (22.2–31.0)
Once/week	3.6 (0.4–10.0)	5.6 (3.5–8.6)
2–6 times/week	11.0 (7.4–14.2)	24.4 (20.5–29.3)
Once per day	13.0 (8.7–18.3)	8.7 (5.5–12.7)
Two or more times per day	60.6 (54.5–67.0)	26.9 (21.8–30.3)
Ever drink alcohol while doing drugs (injecting or non-injecting)	23.3 (18.5–29.5)	36.8 (32.7–42.0)
	<i>n</i> = 57	<i>n</i> = 117
Reasons for drinking alcohol with drugs		
Insufficient amount of drug/intoxication	63.5 (32.8–73.7)	74.0 (64.5–83.4)
Experimentation	8.1 (1.6–31.5)	1.6 (0.3–6.8)
Peer influence	23.0 (12.9–46.0)	21.7 (12.1–30.5)
Other	5.5 (0.8–10.2)	2.7 (0.5–5.8)
Frequency of combining alcohol with drugs	<i>n</i> = 57	<i>n</i> = 117
Every time	15.4 (0.0–28.1)	3.5 (0.0–8.6)
Most of the time	4.8 (0.0–10.5)	8.0 (2.5–23.2)
Sometimes	79.8 (67.9–96.1)	87.3 (72.4–94.1)
Never	—	1.1 (0.0–3.0)

* Multiple responses allowed.

Needle sharing practices among male IDUs

Sharing of needles and injecting equipment is common among IDUs. Respondents were asked about high-risk injecting practices over the last one month (30 days) period. Table 4 shows the distribution of male IDUs reporting high-risk injecting practices in the past one month. A higher proportion of IDUs from Imphal reported sharing needles/syringes (N/S) with others compared to those from Delhi (60 percent vs. 41 percent). IDUs from Imphal were more likely to report high risk injecting practices such as using a needle used by someone else (43 percent vs. 33 percent); lending a needle to someone else after using it (50 percent vs. 38 percent); sharing injection equipment (71 percent vs. 28 percent) and drawing up drug solution from a common container shared with others (70 percent vs. 55 percent). Around 15 percent of male IDUs from both sites reported receiving injection from a professional fixer (a person who pre-fills a syringe to inject to one or more IDUs). There was no difference between sites in reporting risky injecting practices such as front-loading or back-loading of

syringes. IDUs from Delhi were more likely to report cleaning needles used by others every time before use.

The needle and syringe exchange programme (NSEP) and chemist shops were the most frequent source of clean needles for IDUs at both sites (Table 4). Under the NSEP, used needles should come back to the needle exchange program in exchange for sterile needles. However, only 49 percent of IDUs from Delhi and 14 percent from Imphal returned the used needles. An alarmingly high number of IDUs from Imphal (65 percent) disposed their used needles by throwing them just anywhere.

HIV knowledge and awareness among male IDUs

Study participants were assessed for their knowledge of HIV infection and transmission. A greater proportion of IDUs from Imphal (100 percent) had heard of HIV/AIDS compared to those from Delhi (74 percent). [Data not shown.] Although more IDUs had heard of HIV in Imphal, a greater proportion of IDUs from Delhi answered

Table 4:
Needle/Syringe sharing practices of male IDUs in the last one month in Delhi and Imphal*

	Delhi Population estimates (95% CI)	Imphal Population estimates (95% CI)
Number of people with whom respondent shared needles	<i>n</i> = 742	<i>n</i> = 627
0	59.1 (53.5–65.2)	35.7 (29.8–42.5)
1–5	34.2 (28.5–39.6)	53.1 (47.1–59.3)
> 5	6.8 (4.8–8.5)	6.7 (4.4–8.9)
No response	—	4.5
Injecting with a needle used by someone else	<i>n</i> = 742	<i>n</i> = 670
Every time	2.1 (1.1–3.0)	0.2 (0.1–0.7)
Most of the time	2.2 (1.1–3.0)	4.0 (2.0–5.2)
Sometimes	29.2 (24.2–33.8)	38.8 (32.6–43.6)
Never	66.6 (62.0–72.0)	57.0 (52.5–64.0)
Cleaning needles previously used by someone else	<i>n</i> = 311	<i>n</i> = 303
Every time	69.3 (61.7–82.8)	34.9 (25.5–44.4)
Most of the time	16.8 (7.4–23.6)	24.9 (17.0–32.3)
Sometimes	12.8 (4.6–17.5)	39.3 (28.0–50.7)
Never	1.1 (0.0–6.5)	0.9 (0.1–4.4)
Lending needles to someone else after injecting with it	<i>n</i> = 742	<i>n</i> = 670
Every time	0.9 (0.3–1.7)	30.0 (0.1–0.3)
Most of the time	2.6 (1.1–4.2)	4.2 (2.3–5.9)
Sometimes	33.6 (27.9–38.2)	45.3 (38.1–50.1)
Never	62.5 (57.8–68.8)	50.3 (45.6–57.6)
Receiving injection from a fixer^a	<i>n</i> = 770	<i>n</i> = 670
Every time	1.4 (0.6–2.4)	—
Most of the time	1.1 (0.4–1.9)	1.6 (0.4–2.6)
Sometimes	13.6 (10.6–16.2)	12.3 (9.3–15.6)
Never	83.8 (81.0–87.1)	86.0 (82.7–89.4)
Back loading/front loading^b	<i>n</i> = 767	<i>n</i> = 670
Every time	0.9 (0.2–1.7)	0
Most of the time	0.9 (0.4–1.6)	1.6 (0.4–2.6)
Sometimes	20.5 (16.2–24.2)	17.9 (13.4–21.4)
Never	77.1 (73.4–81.9)	80.5 (77.1–85.3)

Table 4: continued

	Delhi Population estimates (95% CI)	Imphal Population estimates (95% CI)
Sharing injection equipment^c	<i>n</i> = 742	<i>n</i> = 670
Every time	4.2 (2.9–5.8)	2.2 (1.1–3.5)
Most of the time	2.2 (1.2–3.3)	16.3 (11.4–18.1)
Sometimes	21.0 (17.0–25.3)	52.4 (47.3–58.7)
Never	72.4 (67.7–76.9)	29.0 (24.5–35.7)
Drawing drugs from a common container	<i>n</i> = 767	<i>n</i> = 670
Every time	4.6 (3.0–6.5)	(1.0–3.5)
Most of the time	7.1 (4.7–9.7)	16.6 (12.2–19.3)
Sometimes	43.5 (37.5–49.0)	51.5 (45.6–56.9)
Never	44.6 (38.8–51.3)	30.0 (25.5–36.7)
Usual place of getting new needles	<i>n</i> = 783	<i>n</i> = 765
Needle exchange	54.2 (49.9–63.3)	47.9 (42.2–52.6)
Chemist’s shop	37.6 (30.8–44.0)	49.2 (44.5–55.0)
Drug dealer/peddler	4.7 (1.3–9.2)	1.4 (0.6–2.4)
Sex partner	—	—
Other (Health worker, Family/Spouse, Friends)	1.6 (0.5–2.6)	1.5 (0.5–2.7)
Needle/Syringe disposal after use last time	<i>n</i> = 743	<i>n</i> = 670
Gave it to the needle exchange	48.7 (42.4–55.6)	13.6 (9.9–18.2)
Passed it on to another person	2.6 (1.1–4.5)	3.0 (1.4–4.4)
Threw it on the ground or into river	41.2 (34.3–47.6)	65.2 (58.8–70.5)
Destroyed/Buried it in the ground	6.2 (4.4–8.4)	13.8 (10.1–18.6)
Other	1.2 (0.4–2.1)	4.2 (2.5–6.7)

Sample sizes vary slightly due to missing data.

^a Receiving injections from a fixer is defined as using a pre-filled syringe that was filled up by someone else.

^b Backloading and frontloading are methods of splitting drugs by squirting the drugs from one syringe to another or by pulling up drugs from one syringe using a needle.

^c Sharing of injection equipment includes sharing of vials, cookers, containers, cotton, files, and rinse water.

correctly on questions assessing knowledge of transmission of HIV (Table 5).

HIV testing among male IDUs

Although knowledge levels of HIV were high at both sites, only one-third of the IDUs from Delhi and half of those from Imphal had ever been tested for HIV infection. More than half of the IDUs had been tested in the past 12 months. The majority of those tested did find out their test results. Of those who knew their test results, a much higher proportion of IDUs in Imphal reported a positive HIV test result than those in Delhi; nearly half in

Imphal and a quarter in Delhi reported an HIV positive test result (Table 6). IDUs in Delhi were more likely to have been tested at a non-governmental organisation, while the majority in Imphal was tested at a government hospital or clinic. In Imphal, about one-quarter of those who reported being HIV positive were receiving anti-retroviral therapy (ART).

Knowledge and testing of Hepatitis B and Hepatitis C among male IDUs

Awareness of Hepatitis B and C was also explored. While almost three-quarters of IDUs in Imphal had

Table 5:
Knowledge of HIV transmission among male IDUs who have heard of HIV in Delhi and Imphal (% responding correctly)

	Delhi Population Estimates (95% CI) <i>n</i> = 634	Imphal Population Estimates (95% CI) <i>n</i> = 763
Can people protect themselves from HIV, the virus that causes AIDS, by using a condom correctly every time they have sex?	93.6 (89.9–96.2)	97.2 (95.3–98.4)
Can people protect themselves from HIV by having one uninfected faithful sex partner?	83.2 (77.8–86.7)	71.8 (68.3–76.1)
Can people protect themselves from HIV by abstaining from sexual intercourse?	81.0 (76.4–86.2)	62.7 (58.0–66.9)
Can a person get HIV by injecting with a needle/syringe that was already used by someone else?	97.0 (94.9–99.0)	98.8 (97.9–99.5)
Can a pregnant woman infected with HIV transmit the virus to her child during pregnancy or delivery?	87.8 (83.9–92.1)	82.3 (78.6–85.5)
Can a woman with HIV transmit the virus to her newborn child through breastfeeding?	77.3 (71.1–82.2)	78.6 (75.3–82.8)

Table 6:
HIV testing among male IDUs who have heard of HIV in Delhi and Imphal

	Delhi Population Estimates (95% CI)	Imphal Population Estimates (95% CI)
	<i>n</i> = 634	<i>n</i> = 763
Ever had HIV test	37.1 (31.0–42.6)	49.2 (43.4–53.8)
Time of most recent HIV test	<i>n</i> = 281	<i>n</i> = 413
< 1 year ago	56.6 (46.8–69.2)	58.0 (52.9–68.0)
1–2 years ago	19.3 (9.6–25.6)	18.6 (12.5–25.6)
> 2 years ago	24.1 (15.1–35.5)	23.5 (14.8–27.0)
Place of most recent HIV test	<i>n</i> = 281	<i>n</i> = 413
Government hospital/clinic	21.0 (10.3–27.7)	83.6 (74.9–87.9)
Private hospital	2.0 (0.0–8.8)	5.3 (2.6–9.8)
Non-governmental organisation	75.1 (67.9–86.6)	8.1 (5.3–14.3)
Found out HIV test results	82.5 (74.8–90.7)	86.8 (83.5–92.2)
Self-reported HIV test results	<i>n</i> = 240	<i>n</i> = 355
Positive	23.9 (14.2–35.9)	44.2 (34.6–55.5)
Negative	73.0 (59.0–84.0)	54.6 (42.7–64.1)
No response	3.2 (0.0–8.8)	1.2 (0.0–3.9)
Receiving ART	<i>n</i> = 49	<i>n</i> = 178
	6/49 (12%) ‡	23.3 (9.3–32.2)

‡ Sample proportions presented as population estimates from RDSAT not available for small sample sizes.

heard of Hepatitis B, less than one in five IDUs in Delhi had heard of it (Table 7). However, among those who had heard of Hepatitis B, a higher proportion in Delhi (36 percent) had been tested for Hepatitis B compared to those in Imphal (17 percent). Knowledge of Hepatitis C was even lower in both cities. Having tested for Hepatitis C was

similarly low in both cities. Although population estimates of self-reported Hepatitis B and C test results were not available due to the small numbers of IDUs who had taken the test, the sample percentages reflect high Hepatitis B (one to two out of ten) and C prevalence rates (about one-half) in both cities.

Table 7:
Knowledge and testing of Hepatitis B and C among male IDUs in Delhi and Imphal

	Delhi Population Estimates (95% CI) N = 783	Imphal Population Estimates (95% CI) N = 766
Heard of Hepatitis B	14.1 (11.2–18.3)	65.0 (59.7–69.9)
Have ever been tested for Hepatitis B	35.6 (8.4–41.7)	17.4 (13.4–24.3)
Self-reported result of Hepatitis B test	<i>n</i> = 32	<i>n</i> = 86
Positive	5/32 (16) ‡	5/86 (6) ‡
Negative	23/32 (72) ‡	70/86 (81) ‡
Don't know	4 (13) ‡	11/86 (13) ‡
Heard of Hepatitis C	8.9 (6.5–12.3)	46.1 (40.6–51.3)
Have ever been tested for Hepatitis C	37.4 (2.1–52.7)	20.1 (13.0–27.7)
Self-reported result of Hepatitis C test	<i>n</i> = 25	<i>n</i> = 70
Positive	11 (44) ‡	40 (57) ‡
Negative	13 (52) ‡	29 (41) ‡
Don't know	1 (4) ‡	1 (1) ‡

‡Sample proportions are presented as population estimates from RDSAT not available for small sample sizes.

Sexual Behaviours of Male IDUs

Sexual activity and female sex partners of male IDUs

Among the male IDUs, approximately one-half (Imphal) to two-thirds (Delhi) reported having had sex in the last 12 months. The majority of the sexually active male IDUs had sex with a female in the last 12 months in both Delhi and Imphal (Table 8). Multiple partnerships were more common in Delhi than in Imphal. Over one-third of the sexually active males in Delhi had 2–5 female sex partners and slightly over ten percent had six or more female

partners. By contrast, over three-quarters of the sexually active male IDUs in Imphal had only one female sex partner in the past 12 months.

Regular female partners: Sexual relations with a regular partner, defined as a spouse or a co-habiting partner, was much more common in Imphal than in Delhi. Among men who had sex with a female partner in the last 12 months, the majority in Imphal had a regular partner while less than half in Delhi had a regular partner. The majority who had a regular sex partner reported having had only one

Table 8:
Sexual behaviours of male IDUs in the last 12 months

	Delhi Population Estimates (95% CI) N = 783	Imphal Population Estimates (95% CI) N = 765
Had sex in the last 12 months	64.7 (58.1–71.4) n = 552	54.6 (49.1–58.8) n = 435
Had sex with a female partner	89.9 (87.1–93.9) n = 424	95.5 (89.8–99.6) n = 338
Number of female sex partners		
1	51.0 (43.9–61.9)	78.8 (72.2–87.0)
2–5	38.0 (29.0–45.5)	19.2 (12.1–26.3)
6–20	9.2 (3.9–13.5)	2.0 (0.0–2.3)
21+	1.8 (0.8–3.4)	0

regular sex partner and almost all reported a partner who was a non-IDU (Table 9). Consistent condom use with regular partners in the last 12 months was extremely low in both Delhi (8 percent) and Imphal (19 percent).

Sex with female partners in exchange for money, drugs or gifts: Sex with female partners in exchange for money, drugs or gifts (commercial sex) was distinctly more common among male IDUs in Delhi than in Imphal. Over one-half of male IDUs in Delhi who had sex with a female partner and twenty percent in Imphal engaged in transactional sex with a female partner in the last 12 months (Table 10). In Delhi, nearly two-thirds of those engaging in commercial sex had at least two such partners and over two-thirds reported that none of their partners injected drugs. Although consistent condom use with commercial sex partners was higher than with regular and non-regular partners, it is still extremely low (Figure 3). Most common

places where respondents met these partners were public places (56 percent), which include cinema halls, public toilets, parks, highways and fly-overs, and brothels (36 percent). (Population estimates are not available for Imphal, however, sample percentages are presented in Table 10.)

Non-regular sexual partners: Male IDUs were also asked about sexual activity with non-regular partners, which was defined as a partner who is not a spouse or co-habiting partner and who the respondent did not pay for sex. Sexual partnerships with non-regular sex partners were less common than other types of partnerships in both Delhi and Imphal, with approximately 20 percent of male IDUs who had sex with a female partner reporting sex with non-regular partners in the last 12 months. In Imphal, almost three-quarters had at least two non-regular partners in the last 12 months. (Population estimates for some of the characteristics of the partnerships were not

Table 9:

Sex with regular female partners among male IDUs in the last 12 months in Delhi and Imphal

	Delhi Population Estimates (95% CI) <i>N</i> = 487	Imphal Population Estimates (95% CI) <i>N</i> = 418
Had regular female partner	44.2 (37.4–55.4)	81.8 (77.1–88.5)
Number of regular female partners	<i>n</i> = 182	<i>n</i> = 274
1	93.8 (93.7–98.8)	92.1 (85.5–96.9)
2–5	4.3 (0.6–4.5)	7.9 (3.1–14.5)
6–20	1.8 (0.0–2.5)	0
21+	0.0	0
Number of regular female partners who inject drugs	<i>n</i> = 182	<i>n</i> = 239
None	97.1 (96.9–100.0)	97.2 (93.4–100.0)
1	—	1.7 (0.0–5.6)
2+	0.4 (0.0–1.0)	1.1 (0.0–2.3)
Don't know	—	0
Condom use with regular female partners	<i>n</i> = 182	<i>n</i> = 274
Consistent	8.0 (1.4–22.0)	19.0 (12.5–37.5)
Inconsistent	33.1 (18.2–58.5)	51.5 (39.3–62.8)
Never	58.9 (30.9–74.8)	29.5 (16.1–34.1)

Figure 3:

Consistent condom use over the last 12 months with different type of sex partners among male IDUs in Delhi and Imphal

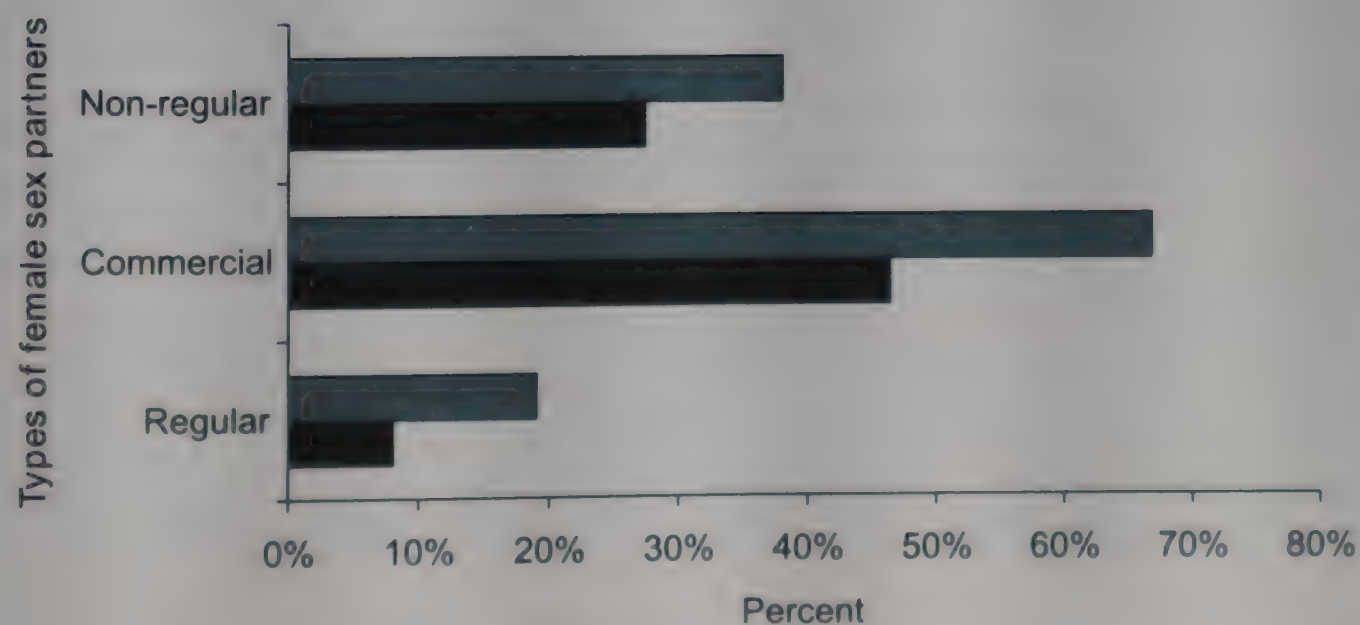


Table 10:
Commercial sex with female partners among male IDUs in the last 12 months

	Delhi Population Estimates (95% CI) N = 487	Imphal Population Estimates (95% CI) N = 188
Paid for sex in exchange for money, gifts or drugs	57.9 (46.7-64.5)	20.7 (14.2-26.9)
Number of transactional female sex partners	n = 293	n = 57
1	36.6 (24.6-49.5)	27 (47%) [‡]
2-5	48.7 (36.1-59.9)	28 (49%) [‡]
6-20	11.9 (4.5-23.4)	2 (4%) [‡]
21+	2.8 (0.9-6.9)	0 [‡]
Number of commercial female partners who inject drugs	n = 293	n = 57
None	69.0 (57.6-79.7)	33 (58%) [‡]
1	11.5 (6.3-19.6)	10 (18) [‡]
2+	16.8 (7.9-23.9)	6 (11%) [‡]
Don't know	2.7 (0.4-7.4)	8 (14%) [‡]
Venue where men met commercial female partners	n = 293	n = 57
Bar/clubs/ cinemas/massage parlours	0	7 (12%) [‡]
Public place	56.3 (40.9-67.4)	10 (18%) [‡]
Brothel	35.8 (22.7-49.6)	21 (37%) [‡]
Hotel/Lodge	0	10 (18%) [‡]
Home-based	5.7 (2.3-16.2)	2 (4%) [‡]
Temple	0	0 [‡]
Other	1.1 (0.0-6.0)	7 (12%) [‡]
Condom use with commercial female partners	n = 293	n = 57
Consistent	46.3 (35.6-58.3)	38 (67%) [‡]
Inconsistent	19.6 (11.9-35.5)	13 (23%) [‡]
Never	34.1 (19.9-41.8)	6 (10.5%) [‡]

[‡] Sample proportions are presented as population estimates from RDSAT not available for small sample sizes.

available due to the small number of respondents who had non-regular partners; sample percentages are reported in Table 11.)

Male sex partners of male IDUs

Male-to-male sexual relations were more common in Delhi than in Imphal, where it was practically non-existent (*n* = 5). Almost 20 percent of sexually active male IDUs in Delhi reported having had anal sex with another man in the last 12 months. Of those, half reported having two or more male

partners, with a third reporting six or more male partners (Figure 4).

Among the men who had sex with other men, a majority (78 percent) paid for sex with other men (i.e., has sex with a male sex worker), one-third of whom had 2–5 partners and slightly less than half had six or more paid male sex partners. Of the male IDUs who paid for sex, half reported having paid for sex with partners who do not inject drugs. Male IDUs having sex with other types of male partner was less common, with a quarter or less reporting

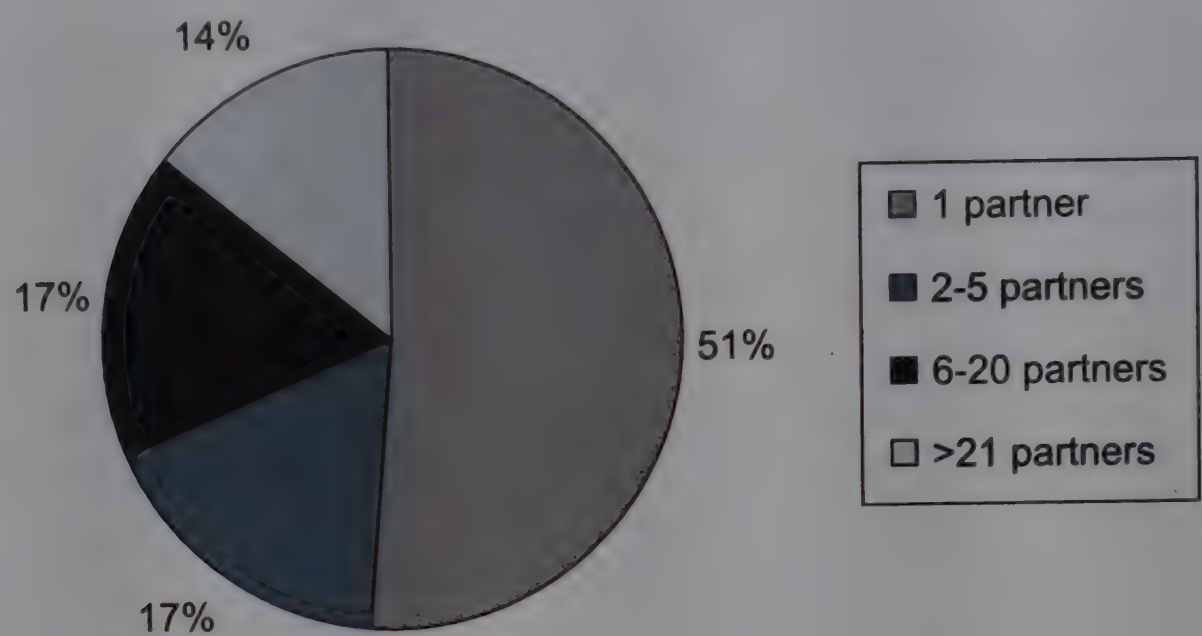
Table 11:
Sex with non-regular female partners among male IDUs who had sex in the last 12 months

	Delhi Population Estimates (95% CI) <i>n</i> = 487	Imphal Population Estimates (95% CI) <i>n</i> = 388
Had non-regular female partner	18.0 (11.3-24.0)	22.9 (16.3-29.8)
Number of non-regular female partners	<i>n</i> = 66	<i>n</i> = 66
1	27/66 (40%)	28.9 (5.4–63.0)
2–5	29/66 (45%)	71.1 (37.6–94.7)
6–20	7/66 (11%)	0
21+	3/66 (5%)	0
Number of non-regular female partners who inject drugs	<i>n</i> = 66	<i>n</i> = 66
None	78.3 (52.4–100.0)	54/66 (82) [‡]
1	21.7 (0.0–47.6)	5/66 (8)
2+	0.0 (0.0–4.6)	5/66 (8)
Don't know	0.0 (0.0–4.6)	2/66 (3)
Condom use with non-regular female partners	<i>n</i> = 66	<i>n</i> = 66
Consistent	27.3 (1.2–100.0)	25/66 (39)
Inconsistent	8.2 (0.0–17.3)	22/66 (32)
Never	28.5 (0.0–30.9)	19/66 (30)

[‡] Sample proportions are presented as population estimates from RDSAT not available for small sample sizes.

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Figure 4:
Number of male partners of male IDUs in Delhi (*n* = 126)



receiving money for sex with a male partner (*n* = 42), having a non-regular (*n* = 21) and/or a regular male partner (*n* = 32).

Although population estimates for condom use are not available, the pattern of condom use with different types of partners is fairly similar to that of with female partners, in that consistent condom use is greatest with commercial sex

partners, followed by regular sex partner and lastly non-regular partners. Twenty-nine out of the 100 male IDUs who paid for sex (29 percent), sixteen out of the 42 male IDUs who received money for sex (38 percent), three out of 21 who had a non-regular male sex partner (14 percent), and nine out of 32 who had a regular male sex partner (28 percent) reported consistent condom use (Table 12).

Table 12:

Sex with male sex partners among male IDUs in last 12 months in Delhi

	Population Estimates (95% CI)
	<i>n</i> = 126
Paid for sex with male partner (male sex worker [MSW])	77.9 (72.0–97.0)
Number of MSW partners	<i>n</i> = 100
1	17.7 (0.0–78.0)
2–5	38.6 (0.0–60.3)
6–20	33.1 (0.0–90.8)
21+	10.6 (0.0–20.7)
Number of MSW partners who inject drugs	<i>n</i> = 100
None	49.4 (16.4–90.2)
1	13.6 (0.0–44.5)
2+	23.5 (0.0–73.3)
Don't know	13.5 (0.0–15.6)
Condom use with MSW[‡]	<i>n</i> = 100
Consistent	29 (29%)
Inconsistent	21 (21%)
Never	50 (50%)
	<i>n</i> = 126
Received money for sex with male partner	26.0 (4.6–26.4)
Condom use with men from whom they received money for sex[‡]	<i>n</i> = 42
Consistent	16/42 (38%)
Inconsistent	10/42 (24%)
Never	16/42 (38%)
	<i>n</i> = 126
Regular male partners	16.6 (3.3–18.9)
Condom use with regular male partner[‡]	<i>n</i> = 32
Consistent	9/32 (28%)
Inconsistent	5/32 (16%)
Never	18/32 (56%)
	<i>n</i> = 126
Non-Regular male partners	21/119 (18%)
Condom use with non-regular male partner[‡]	<i>n</i> = 21
Consistent	3/21 (14%)
Inconsistent	0
Never	18/21 (86%)

[‡] Sample proportions are presented as population estimates from RDSAT not available for small sample sizes.

Sexual networks of male IDUs

The study also collected detailed information on the three most recent sex partners of those who had sex in the past 12 months. This section focuses on the male IDU respondents' ties and relationships with their sex partners. Specifically, we report on the characteristics of these sex partners, types of risk behaviours IDUs engaged in with these partners and the social context of these partnerships. The percentages reported in this section are not population estimates based on analyses in RDSAT, but rather sample percentages as the unit of analysis in this section is the partners of respondents and not the respondents themselves.

Number of partners of male IDUs

Of the 544 and 402 male IDUs who reported having sex in the last 12 months in Delhi and Imphal, respectively, approximately two-thirds in Delhi and three-quarters in Imphal reported having had sex with one partner (Figure 5). A higher proportion of male IDUs in Delhi (14 per cent) reported having had at least 3 partners in the last 12 months compared to those in Imphal (7 per cent).

The 544 and 402 male IDUs in Delhi and Imphal reported having a total of 847 and 576 partners, respectively.

Figure 5:

Number of partners of male IDUs in the last 12 months in Delhi ($n = 544$) and Imphal ($n = 402$), (%)

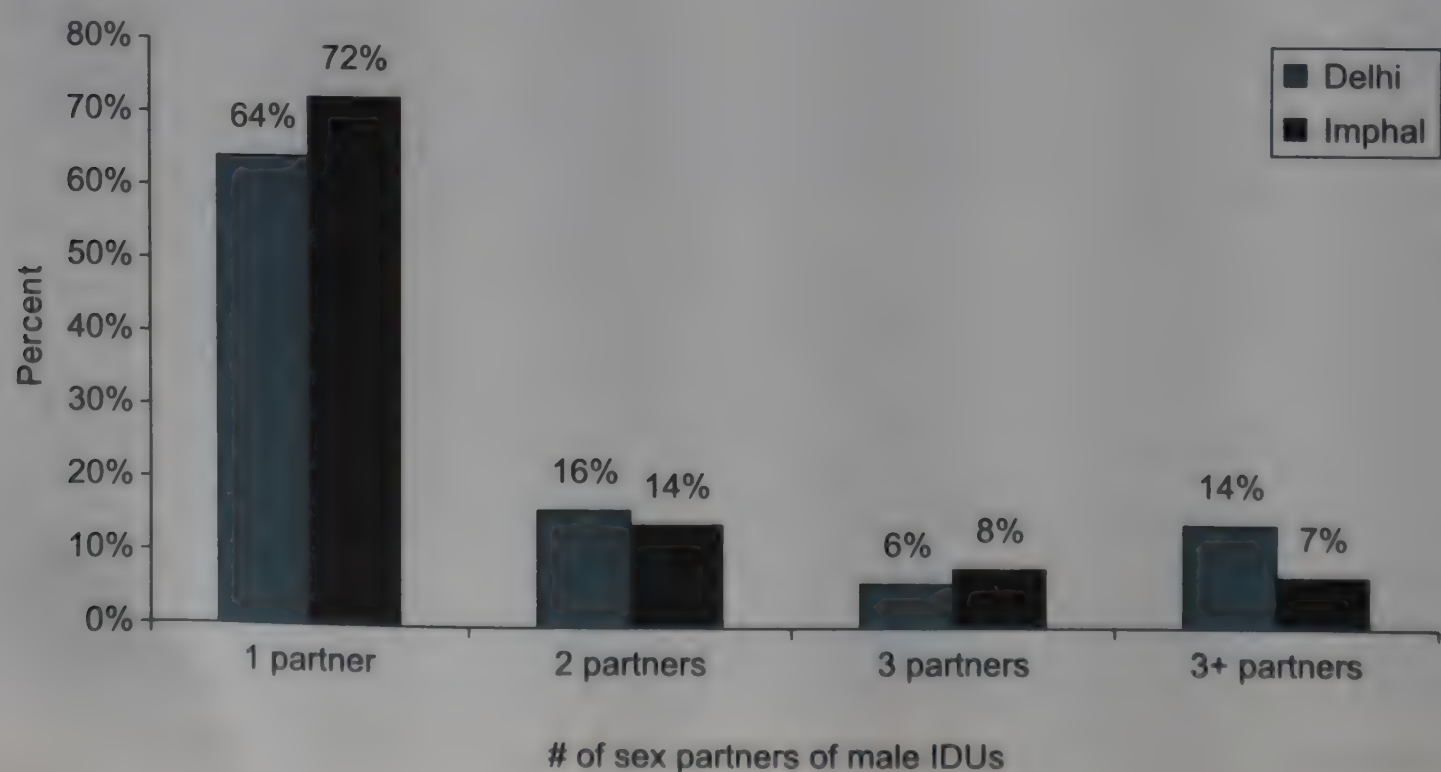


Table 13:

Sex partners of male IDUs by gender and type of partner in Delhi and Imphal

Partners of IDUs	Delhi Percent (n = 847)			Imphal Percent (n = 576)		
	Female	Male	Total	Female	Male	Total
Regular partners	22.2	2.0	24.2	64.4	0.7	65.1
Commercial partners	48.1	11.9	60.0	18.7	1.2	19.9
Non-regular partners	12.8	3.0	15.8	14.3	0.7	15.0
Total	83.1	16.9	100.0	97.4	2.6	100.0

Types of partners of male IDUs

Commercial sex partnerships (60 percent) were more common in Delhi compared to Imphal, where partnerships with regular partners (65 percent) were most common (Table 13). Consistent with findings from the sexual behaviour component of the survey, male-to-male partnerships were more common in Delhi (17 percent) than in Imphal, where it is almost non-existent. Most of the male partners that male IDUs had were commercial partners. Around 15 percent of sexual partnerships, at both sites, were with non-regular partners, the majority of those with female partners (Table 13).

Sexual mixing by sex and types of partners of male IDUs

An analysis of sexual mixing patterns is important in understanding the nature of contact and the risk for transmission of HIV and STIs across and within risk groups. The majority of sexually active male IDUs in Delhi and Imphal had only female

partners. Approximately 1 in 10 male IDUs in Delhi had only male partners (Figure 6). A small subset of sexually active male IDUs in Delhi engaged in sex with both male and females in the last 12 months. The latter two groups, although small, can potentially be a higher-risk group, especially in a social context where male-to-male sex is often hidden, condom use is low and prevention education efforts focus largely on heterosexual sex.

The majority of male IDUs reported having had only one partner in the last 12 months (Delhi: 64 percent; Imphal: 72 percent) mostly regular partners; a small proportion of male IDUs did report a mix of types of partners (Table 14). Six to eight percent of male IDUs with more than one partner in the last 12 months in Delhi and Imphal reported having at least one non-regular or commercial female partner in addition to a regular female partner. This combination represents a higher-risk sexual mix as there is a potential to bridge between higher and lower risk groups (Table 14).

Figure 6:
Sex partners of male IDUs in Delhi (*n* = 544) and Imphal (*n* = 402) in the last 12 months (%)

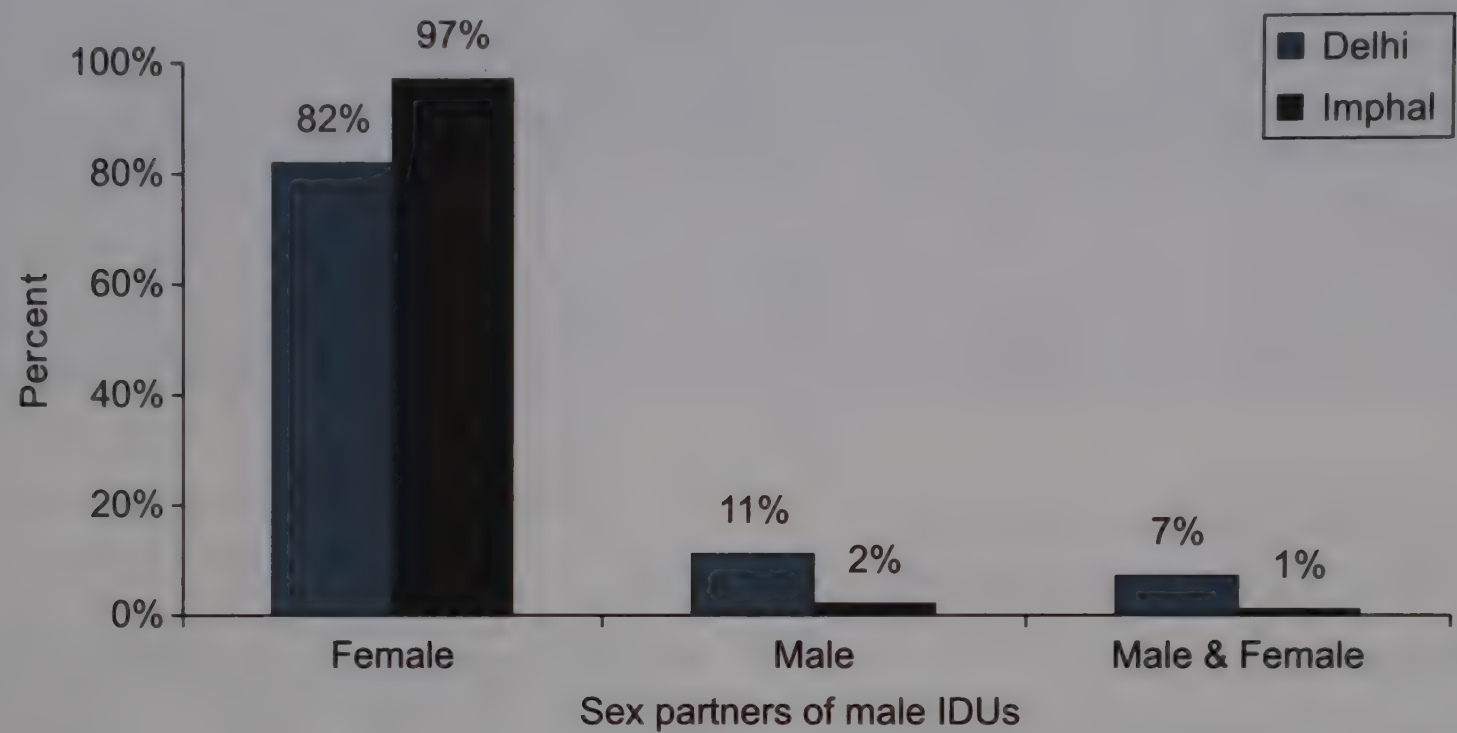


Table 14:
Types of sex partners of sexually active male IDUs (last 12 months) in Delhi and Imphal

Partners of male IDUs	Delhi Percent (<i>n</i> = 544)	Imphal Percent (<i>n</i> = 402)
Male IDUs reporting only 1 partner		
Regular female partner	27.4	57.5
Commercial female partner	21.3	3.0
Non-regular female partner	7.9	9.7
Male partner	7.4	1.2
Male IDUs reporting 2–3 partners		
Only regular female partners	0.2	7.2
Only commercial female partners	15.8	5.0
Only non-regular female partners	1.8	1.0
Only male partners	4.0	0.5
Regular plus non-regular/commercial female partners	5.1	12.4
Male plus only regular female partners	0.6	0.5
Male plus other female partners	5.9	0.7
Other combinations	2.6	1.3
Total	100.0	100.0

Sexual mixing by age among male IDUs

Understanding age differences in sexual partnerships is important as it has implications for the epidemiology of HIV and STIs as well as for intervention design. Age difference between partners is also important as it may impact power dynamics, including sexual negotiations and violence between partners. Findings indicate that while the majority of sex partners of male IDUs were within ten years in age of the respondents, a large proportion of the sex partners (27 percent in Delhi and 12 percent in Imphal) were at least 10 years younger than the IDUs interviewed (Table 15). A relatively small proportion of partners were 10 years or older than the IDUs interviewed.

Place of first meeting sexual partners among male IDUs

Respondents were asked about the venue where they met their sexual partners for the first time. Figure 7 illustrates the place where IDUs met their partners and Table 16 shows the geographic location of that place.

Male IDUs in Delhi and Imphal initially met their partners at a variety of venues depending on the type of partnership. Social and family events were the most common place for meeting regular partners in both Delhi and Imphal and more often in the same part of town (Figure 7, Table 16). By contrast, commercial partners and male IDUs first met more often in the marketplace (50 percent) or the red-light area (26 percent) in Delhi and this was primarily in the same part of town (59 percent). In Imphal, the red-light area was the most common place of first meeting between male IDUs their commercial partners. Unlike in Delhi, male IDUs in Imphal and commercial partners first met outside of town/city (Table 16).

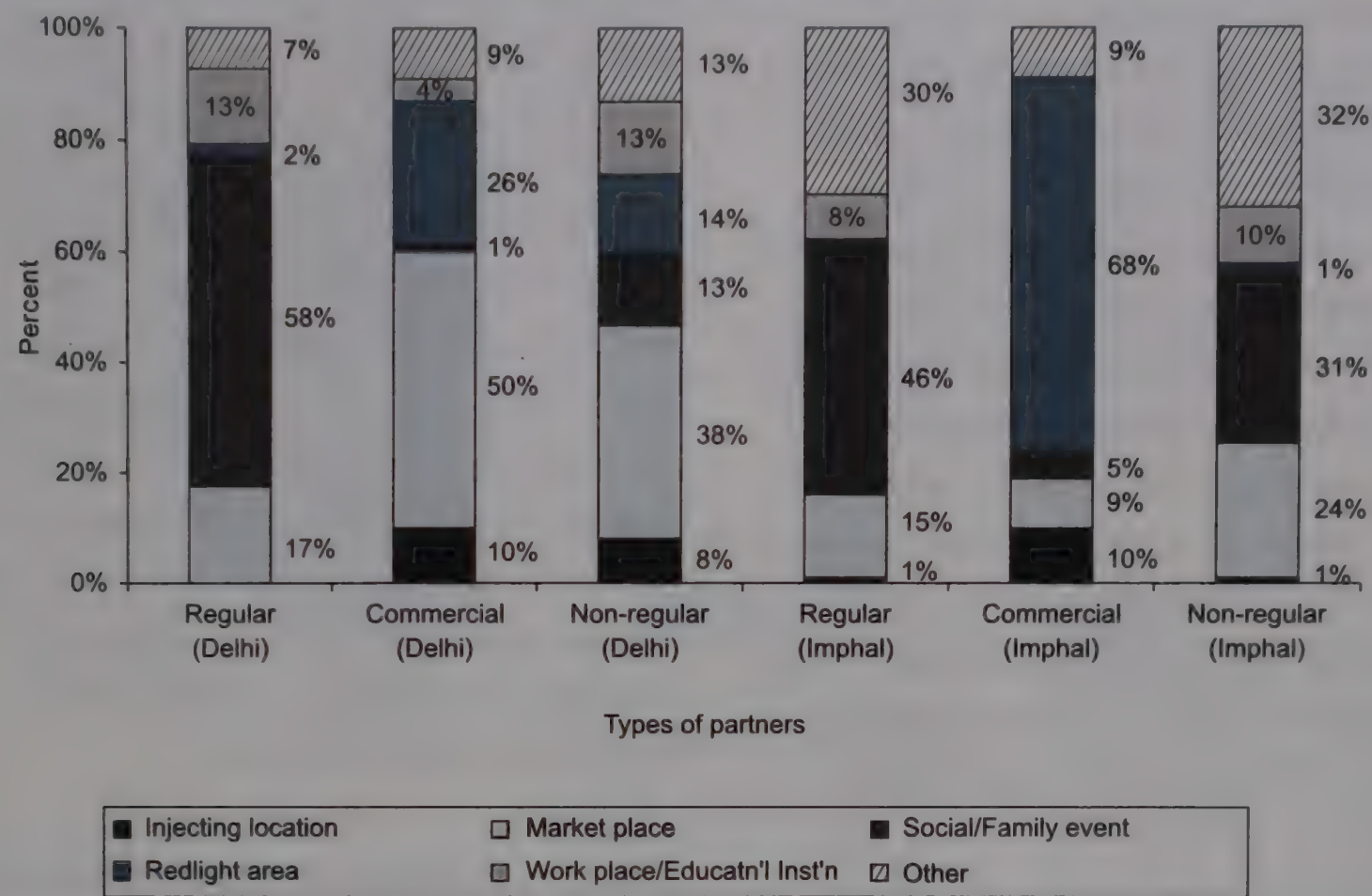
Duration of acquaintance before sexual relation among male IDUs

Duration of acquaintance before sexual contact is an important issue in terms of negotiating safer practices, including condom use. In Delhi, the period of acquaintance before engaging in sexual activity ranged from one day (32 percent) to

Table 15:
Age difference between male IDUs and their sex partners in Delhi and Imphal

Partners of male IDUs	Delhi Percent (n = 847)	Imphal Percent (n = 576)
At least 10 years younger	26.6	12.2
Within 10 years	70.7	87.0
10 years or older	2.7	0.9

Figure 7:
Types of venues where male IDUs first met different types of sex partners in Delhi and Imphal



Delhi n = 847 (Regular partners n = 205; commercial partners n = 509; non-regular partners n = 133)
Imphal n = 576 (Regular partners n = 373; commercial partners n = 116; non-regular partners n = 87)

Table 16:
Geographic location where male IDUs first met their sex partners, by type of partner in Delhi and Imphal

Location	Delhi Percent	Imphal Percent
Regular partners	n = 205	n = 372
Same part of town	66.3	56.5
Different part of town	16.1	35.5
Outside town/city	17.6	8.1
Commercial partners	n = 509	n = 113
Same part of town	58.7	32.7
Different part of town	38.3	37.2
Outside town/city	3.0	30.1
Non-regular partners	n = 133	n = 87
Same part of town	72.9	52.9
Different part of town	18.1	35.6
Outside town/city	9.0	11.5

1+ year (29 percent). By contrast, in Imphal, almost one half of regular sexual partnerships did not involve sexual intercourse until one year upon meeting (Table 17). However, with commercial partners, approximately one half in Delhi and two-thirds in Imphal of commercial sexual partnerships occurred within seven days of meeting.

Condom use with partners among male IDUs

In sexual relations with regular female partners ($n = 188$ in Delhi and $n = 373$ in Imphal), a condom was used at last sexual activity with only a quarter of the partners in Delhi and nearly half of the partners in Imphal. [Data not shown.] The most

Table 17:

Length of time male IDUs knew their sex partners before having sexual relations, by type of partners in Delhi and Imphal

Partners of male IDUs	Delhi Percent ($n = 847$)*	Imphal Percent ($n = 576$)*
Regular Partners	$n = 205$	$n = 372$
1 day	31.7	1.3
2-7 days	9.3	5.1
8-30 days	12.7	9.4
1-6 months	13.7	25.8
7-12 months	3.4	9.7
1+ year	28.8	48.4
Don't know/No response	0.5	0.3
Commercial Partners	$n = 509$	$n = 113$
1 day	51.5	42.5
2-7 days	6.5	27.4
8-30 days	4.5	7.1
1-6 months	10.8	10.6
7-12 months	4.7	1.8
1+ year	20.4	9.7
Don't know/No response	1.6	0.9
Non-regular Partners	$n = 133$	$n = 87$
1 day	27.8	9.2
2-7 days	4.5	6.9
8-30 days	11.3	10.3
1-6 months	17.3	27.6
7-12 months	4.5	3.4
1+ year	31.6	42.5
Don't know/No response	3.0	0.0

* Total number of partners for all respondents.

common reasons for not using a condom were similar between Delhi and Imphal, which included not thinking it was necessary (57 percent and 37 percent), not liking condoms (21 percent and 28 percent), and condoms not being available (8 percent and 14 percent), respectively. Consistent condom use with regular partners was reported by 11 percent IDUs in Delhi and Imphal.

In sex with commercial female partners ($n = 408$ in Delhi and $n = 109$ in Imphal), condoms were more often used at last sex with commercial female partners in Imphal (71 percent) than in Delhi (54 percent), which is higher than condom use with other types of sex partners. Similar reasons emerged for not having used condoms at last sex in Delhi and Imphal: not thinking it was necessary (26 percent and 36 percent), condoms not being available (23 percent and 32 percent), and not liking condoms (22 percent and 21 percent), respectively.

In sexual partnerships with non-regular female partners ($n = 108$ in Delhi and $n = 83$ in Imphal), condoms were used at last sex with approximately one-third of the non-regular partners in both Delhi and Imphal. Similar reasons were cited for non-condom use at last sex: didn't think it necessary (approximately a quarter), condoms not being available (20 percent and 37 percent, respectively). Additionally, not having thought of condom use was cited as another common reason (23 percent and 16 percent, respectively), unlike with other partner types, in Delhi and Imphal.

In sexual relations with male partners ($n = 143$), condoms were used at last sex with

approximately one-third of the male partners in Delhi. Again, not thinking condoms are necessary was the most common reason (32 percent) for not using condoms, followed by condoms not being available (28 percent).

HIV status of partners of male IDUs

IDUs were also asked about their sex partner's HIV status. Less than 7 percent of all sex partners were reported by respondents to be HIV positive. The highest known HIV positive status of partners was reported by respondents of their regular female partners (6.4 percent of partners) in Imphal. The greatest proportion of partner's HIV status that were unknown by the respondents were with their commercial partners (60–90 percent of commercial partners) in Delhi and Imphal.

Concurrent sexual partnerships of male IDUs

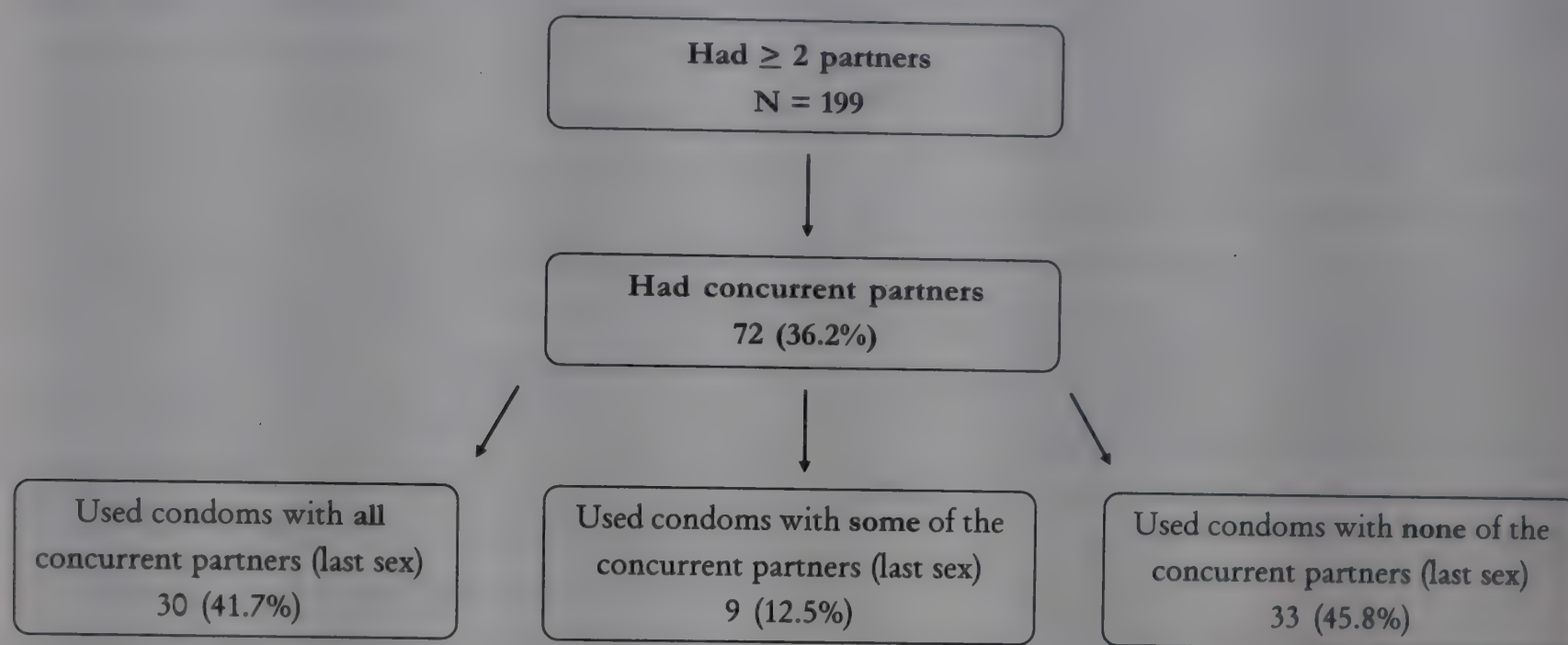
Concurrency in partnerships in the past one year was calculated based on respondents' answers to questions about the first and the last date they had sex with a partner. Answers were given by month and year. If there was any overlap in the duration of the sexual relationships, the respondent was considered to have had concurrent relationships.

Over one-third and about a quarter of the male IDUs who reported having had more than one partner in the last 12 months in Delhi and Imphal, respectively, had concurrent relationships. Figure 8 illustrates condom use in concurrent relationships. Nearly half of the concurrent relationships in Delhi (46 percent) and a third in Imphal (33 percent) were

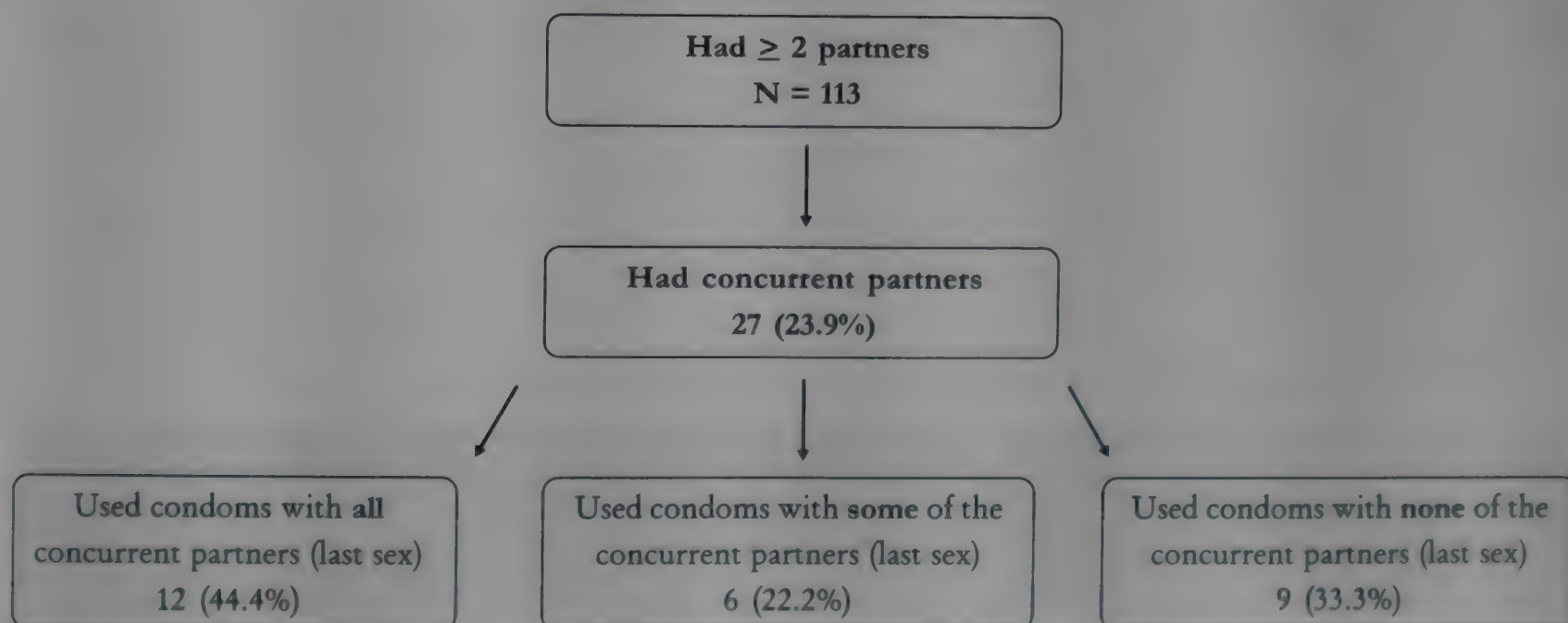
Figure 8:

Concurrent partnerships and condom use among male IDUs who had 2–3 partners in the last 12 months in Delhi (a) and Imphal (b).

(a) Delhi



(b) Imphal



unprotected, that is no condoms were used at last sex with any of the concurrent sexual partners.

Sexually Transmitted Infections among male IDUs

Self-report of sexually transmitted infections (STIs) symptoms in the last 12 months were more common among IDUs in Delhi compared to IDUs in Imphal. While nearly 20 percent in Delhi reported penile discharge and/or penile sore or ulcer, approximately five percent reported these symptoms in Imphal. Of those who experienced STI symptoms in the last 12 months, a much lower proportion in Delhi (42 percent) had sought treatment compared to those in Imphal (72 percent) (Table 18).

Awareness of HIV programs and utilisation of services among male IDUs

IDUs were asked whether they had heard of de-addiction and HIV prevention programmes for IDUs in their community. More IDUs in Imphal

reported knowledge of de-addiction and HIV prevention programmes targeted at IDUs compared to those in Delhi. A greater proportion of IDUs in Imphal had been referred for HIV testing, had been contacted by a peer outreach worker, referred to a NSEP, detoxification or rehabilitation, and received HIV related information (Table 19). IDUs in Imphal were also more aware of where and how to access the above listed services.

A large number of NGOs are providing harm reduction services in India. Services provided generally include abscess management, management of overdose, drug substitution, detoxification, de-addiction and rehabilitation and counselling. Respondents were asked about the services they had accessed in the past 12 months. IDUs in Delhi mainly sought services for abscess management, detoxification and self help group support. In Imphal, drug substitution, counselling and detoxification were the main services sought from NGOs.

Table 18:
Self-reported symptoms of STIs in the last 12 months among male IDUs in Delhi and Imphal

	Delhi Population Estimates (95% CI) <i>n</i> = 544	Imphal Population Estimates (95% CI) <i>n</i> = 408
Experienced penile discharge	19.6 (14.2–23.8)	4.1 (2.0–8.3)
Had penile sore or ulcer	13.2 (8.9–18.4)	5.9 (2.9–9.8)
Treated STI symptoms	41.5 (27.0–72.3)	72.3 (66.7–100.0)

Table 19:

Exposure to HIV prevention programs among male IDUs in Delhi and Imphal

	Delhi Population Estimates (95% CI) N = 783	Imphal Population Estimates (95% CI) N = 766
Aware of de-addiction programs in city	79.1 (73.3–85.8)	91.5 (88.7–94.0)
Aware of HIV/AIDS prevention programs for drug users	64.8 (58.4–71.4)	93.8 (91.8–95.5)
Encountered these activities in last 12 months:		
Referred for HIV counselling and testing	21.8 (18.2–26.3)	60.7 (55.3–65.1)
Counselled on HIV prevention by outreach/social worker	52.5 (47.1–58.9)	75.8 (71.5–79.6)
Referred for needle exchange	61.9 (55.9–68.7)	75.2 (70.5–78.9)
Referred for medical services	24.4 (19.4–28.5)	27.4 (22.2–31.4)
Referred for detoxification rehabilitation	36.0 (30.8–42.4)	54.7 (49.1–59.6)
Received information on HIV	66.1 (59.4–72.3)	88.2 (85.5–90.8)
Knows where and how to receive these services in city		
Needle exchange services	72.3 (65.9–79.2)	92.8 (90.2–94.8)
Treatment for abscesses	67.9 (61.7–74.4)	38.1 (33.5–43.9)
Free HIV test	52.3 (47.0–58.8)	72.9 (68.4–77.1)
Information on STI and HIV/AIDS problem	58.5 (52.2–65.3)	79.5 (75.1–83.2)
Medical help for HIV-infected people	33.2 (29.1–39.1)	56.7 (52.5–62.0)
STI test	41.0 (36.5–47.6)	33.0 (28.6–38.7)
Rehabilitation/Detoxification of drug users	72.9 (68.0–79.1)	85.4 (81.4–88.7)
Receiving condoms	72.4 (65.7–79.0)	85.0 (81.7–88.9)
Drug abuse-related services obtained in the last 12 months		
Treatment of abscess	30.5 (25.4–35.2)	9.0 (6.9–11.7)
Treatment for overdose	3.4 (2.1–5.1)	10.2 (7.8–12.9)
Drug substitution	28.5 (23.2–34.4)	63.0 (58.1–67.9)
Outpatient counseling	27.4 (23.2–32.5)	61.3 (56.4–66.6)
Self-help group	35.2 (30.3–40.8)	22.2 (18.2–26.8)
Detoxification/De-addiction	35.9 (30.0–41.8)	54.9 (49.4–59.5)
Rehab	10.1 (7.6–13.0)	27.6 (23.6–32.8)

Female IDUs in Delhi and Imphal

For this study, participants were asked to recruit three other IDUs who they knew as part of the RDS procedure. However, few female IDUs were recruited through this process in this study. In Delhi, out of a total of 800 IDUs, 17 were females; in Imphal, of the 800 IDUs recruited, 34 were females. Due to the small number of female IDUs, sample proportions are reported rather than population estimates in this section for key indicators.

Delhi

During the last one month, the majority of female IDUs reported injecting similar drugs as male IDUs in Delhi, primarily Avil/Phenargan (13/17), tranquilisers (11/17) and buprenorphine (8/17). Most of the female IDUs injected drugs 1–3 times per month (11/17), and were injecting in the street or park (13/17). Although female IDUs in our sample appear to inject less often than male IDUs, almost all of the females who injected in the last one month reported sharing needles/syringes with someone else (13/14), who included a usual sex partner (13/14), a professional injector (10/14), a friend whom she did not meet often (9/14), and a sex partner whom she did not know (8/14).

All female IDUs reported having sex with a man in the last 12 months, the majority (13/17) of whom reported at least fifteen sex partners in the last 12 months. Of the 17 female IDUs in the study, 16 reported having a regular partner, all 17 reported having sex in exchange for money, drugs or gifts,

and 3 reported having sex with a non-regular partner in the last 12 months. Condom use was extremely low with all three types of partners: 3/16 with regular partners and 4/17 with commercial partners. A large proportion reported (10/17) reported experiencing a genital sore or ulcer in the last 12 months.

Imphal

Of a total of 34 female IDUs, 6 never injected in the last one month, however, one-half (17/34) reported injecting at least once daily. Almost all injected heroin (26/28) and nothing else in the last one month and they primarily injected in their own homes, unlike in Delhi, where they typically inject in public on the street or parks. Almost half (12/28) of the female IDUs who injected last month did not share a needle or syringe with anyone else. Those who shared did so with another friend she meets frequently; other injecting partners were not common.

About two-thirds (23/34) of the female IDUs in Imphal reported having sex in the last 12 months, of whom 16/23 reported having a regular male partner, 13/23 had a commercial sex partner (client), and only 1/23 reported a non-regular male partner. Consistent condom use with commercial partners was more common with commercial partners (10/13) than with regular male partners (5/16) in the last 12 months. Self-reported STI symptoms were low; only 1 of 18 reported experiencing a genital sore or ulcer in the last 12 months.

Discussion

Study findings reveal two distinctly different drug use patterns, living conditions and sexual risk behaviours shaping the HIV epidemic in the two cities. Higher levels of use of pharmaceutical agents were reported in Delhi compared to a largely heroin and opioid analgesic based drug use pattern in Imphal. This was associated with differences in frequency of injections. While IDUs in Delhi were more likely to report participation in needle exchange programmes, consistent use of sterile needles was low, and cleaning of used needles was mostly reported with cotton and cold water. IDUs from Delhi also injected more frequently leading to a higher risk of local infections, abscesses and associated morbidity. IDUs in Imphal on the other hand injected less frequently but also reported lower utilization of sterile needles; this despite much higher levels of awareness of Needle Syringe Exchange Programmes (NSEP) and IDU targeted prevention services. Information obtained from programme managers suggests that this may in part be due to inadequate access due to shortage of supply and difficulties faced in carrying needles/syringes on one's person in a highly policed area of the state. Findings from the study also suggest that IDUs in Delhi are relatively new to injecting drug use as compared to those in Imphal. In Delhi a quarter of the IDUs had been injecting for less than one year and a further 49 percent for between 1 to 5 years. By contrast a quarter of the IDUs from Imphal had been injecting drugs for more than 6 years and a further third for 10 years or more

making them more hard-core injectors with established injecting habits.

Living conditions and marital status were different between the two sites. Delhi revealed a largely homeless population of mostly single and street-based IDUs, a lifestyle that facilitates unstable and risky sexual relationships. By contrast IDUs in Imphal were mostly married and living at home with families.

The study aimed to reach both male and female IDUs. Despite using RDS with male and female seeds and allowing participants to bring in IDUs of both sexes, we were able to recruit only 51 female IDUs at both sites. The small numbers of female IDUs recruited in this study is likely a reflection of the reality of injection drug use pattern in India rather than a failure of the sampling strategy to recruit females. Study partners did indicate during formative assessments that injection drug use is not common among females and that the IDU community is primarily males. It is also possible that females who are IDUs may also be poorly networked and therefore difficult to reach.

Findings from this study suggest that research and prevention efforts should not only focus on injection behaviours alone, but also sexual behaviours of IDUs. The study reveals that there is a high level of risky sexual behaviours among male IDUs in both Delhi and Imphal. There is however, a distinctly different sexual risk pattern among IDUs in these two cities. In Delhi, the majority of male

IDUs were not married and were in unstable and multiple sexual relationships; by contrast IDUs in Imphal tended to be married and engaged in sex mostly with regular partners. The risk of HIV infection through sexual transmission in Delhi stems primarily from low condom use with all types of sexual partners, engaging in commercial sex and male-to-male sex, and a high rate of partner change including concurrent partnerships. In Imphal on the other hand although the majority of male IDUs had one regular sex partner the risk of HIV transmission remains given the low condom use in the context of a high HIV prevalence.

Condom use was alarmingly low in both cities with all types of sex partners. Although condom use was higher when having sex with commercial partners compared to sex with other types of partners, consistent condom use with commercial partners was still extremely low (approximately one-half).

The study found that about one-third of IDUs in Delhi and a quarter in Imphal reported two or more partners in the last 12 months and of those, a high percentage (37 percent in Delhi and 24 percent in Imphal) had concurrent partnerships. Further, during concurrent sexual relations, less than half used condoms with both partners. Concurrency has been shown to be an important factor in the spread of HIV and other STIs (Morris and Kretzschmar 1997; Potterat et al. 1999; Kretzschmar 2000).

An important finding that emerged in both cities is that the majority of the male IDUs' sex partners were non-injecting partners, which has major implications for the spread of HIV.

Dissortative sexual mixing (i.e., ties between non-like groups) serves as a bridge for HIV transmission from injectors to non-injectors. Therefore, these non-injecting partners, a low risk group, seem to be at an increased risk for HIV through sexual transmission.

A high-risk subgroup that emerged specific to Delhi was a group of men who have sex with men (approximately 20 percent). While MSM sexual activity itself is not a high-risk activity, the fact is that the majority of sexual activity between men was unprotected sex. Further, this subgroup tended to have more sex partners, with a high rate of partner change. A high rate of partner change, particularly in the context of unprotected sex and concurrent relationships, has the potential to speed the spread of HIV (Morris and Kretzschmar 1997).

The higher risk of transmission of HIV, Hepatitis B and C infections among IDU populations is well known. The focus of targeted interventions in India has largely been on HIV prevention through safe injection practices. Yet more than a quarter of the IDUs in Delhi had not heard of HIV/AIDS and less than half had been tested for HIV infection highlighting a gap in prevention programmes. Knowledge regarding hepatitis B and C was even lower. Although a small number of IDUs had been tested for hepatitis C, the prevalence of hepatitis C, based on a self-reported test result, was relatively high at 44 percent in Delhi and 57 percent in Imphal. In contrast, the prevalence of Hepatitis B based on a self reported test result was much lower; Hepatitis B infection is transmitted very efficiently through sex.

Program Implications and Recommendations

The exploratory study, conducted in one high and one low HIV prevalence state, suggests that two distinctly different drug use patterns, living conditions and sexual risk behaviour are shaping the HIV epidemic in the two cities. These differences require a varied approach in addressing HIV-prevention in these two populations. The IDU population in Delhi is largely homeless, street-based and single with high levels of sexual risk behaviour (multiple partners, commercial sex partners, concurrent relationships and low condom use); while, the IDU population in Imphal consists of mostly married IDUs residing at home with their families. Prevention programmes need to be adapted to the specific needs of these two diverse populations. Wider interventions to reach the unstable and highly mobile IDUs of Delhi and to retain them within targeted intervention programmes are needed, while interventions in Imphal must take into account that the target population is somewhat educated, married or co-habiting, and living in proper housing. Additionally, different counselling methods may be more effective for rehabilitation with recent injectors (e.g., IDUs in Delhi) versus longer term injectors who may have more severe addictions (e.g., IDUs in Imphal).

Important gaps in levels of awareness of HIV infection, NSEP and prevention programmes need strengthening. In Imphal despite high levels of awareness of NSEP and prevention programmes, utilisation is low due to social conditions in the

state. Programmes may benefit from interventions targeted at sensitising law enforcement agencies to facilitate easier access to NSEP. Thus a one-size-fits-all prevention programme may not work in all parts of the country. Overall information, education and communication (IEC) should emphasise consistent use of sterile needles, proper cleaning and disposal techniques.

Sexual risk behaviours among IDUs with female partners suggest high rates of multiple partners, sex with commercial partners, low condom use with all types of partners and concurrent relationships. Male-to-male sex was characterised by multiple partners, high rate of partner change, and very low condom use. This is possibly due to a perception that anal sex is less risky. IEC materials and prevention interventions need to emphasise partner reduction and consistent condom use with all type of partners for all types of sex (vaginal, anal).

Although the focus of targeted interventions has been HIV prevention, the study reveals that very few IDUs have been tested for HIV infection. This impedes prevention efforts and access to treatment and care for HIV positive IDUs. It is imperative that prevention programmes emphasise and facilitate HIV testing in this population. Additionally, Hepatitis B and C infections are common among IDUs; both impact the outcome of HIV infection and subsequent treatment with ART. Hepatitis B is also transmitted very effectively via the sexual route and mother to child. IDU prevention efforts need to

be widened to include testing for Hepatitis B and C and the provision of Hepatitis B vaccination for IDUs.

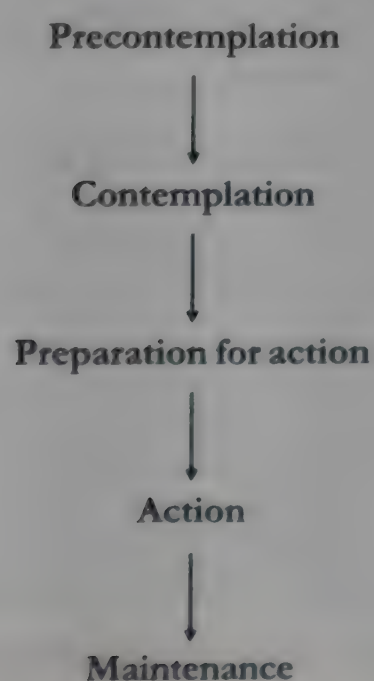
A comprehensive prevention approach addressing risky injection practices with risky sexual behaviour is needed.

The study highlights the existence of different drug use pattern and sexual behaviours influencing the HIV epidemic within one country. A uniform prevention programme may not be successful. Similar research is recommended for other cities in India to explore differences in these behaviours that may require a different prevention approach.

Proposed Behaviour Change Communication (BCC) Strategies

Position in BCC Continuum and Suggested Stimuli for Change

The process of behaviour change can be seen as a progression through five distinct mental states on the part of the individual. The Stages of Change Theory was developed by psychologists in 1982 to compare smokers and self changers along a behaviour change continuum. The rationale behind 'staging' people is to tailor therapy to a person's needs at his/her particular point in the change process. The essence of behaviour change communication, correspondingly, is to assist the individual in making the transition from one stage to the next, till the desired change in behaviour is permanent and a regular part of the individual's life. These five stages, as described by Prochaska, Diclemente and Norcross (Diclemente and Prochaska 1982; Prochaska et al. 1992) in sequential order of progression, are as follows:



At the precontemplation stage, the person has a problem which s/he may or may not recognise but has no intention of changing; the strategy here is to raise awareness or consciousness. During the contemplation phase the person recognises that he has a problem and is seriously considering making a change; the strategy here is to encourage self-evaluation to move forward towards preparing for making a change. Preparation for action refers to when the individual recognises the problem and intends to change within the next few weeks; the efforts here are to encourage and facilitate a commitment by the individual. Action refers to a stage when the individual has enacted behaviour change consistently for a period of time, usually around six months. The effort here is to encourage the individual to sustain behaviour change through reinforcement management, counter conditioning and stimulus control. Maintenance refers to sustained behaviour change over the long term.

In order to carry an individual through this process of self-realization and change, it is necessary to offer a series of well-planned and logical arguments and messages that inform the individual and allow him or her to make the leap from one stage to another. Finding the correct stimulus at a particular point in time has to be correlated with:

- An analysis of the stage at which the individual is currently placed; and

- An assessment of the appropriate stimulus that will suit the mental make up and context of the individual in question.

Broadly, these stimuli can be categorized into six types:

1. Rational stimuli (e.g., appeals to reason, justice, fairness);
2. Emotional stimuli (e.g., patriotic appeals, the chance to earn praise);
3. Skills (the chance to learn a new skill or capability which is perceived as useful);
4. Family and personal networks (motivation due to blood ties or friendship);
5. Social structures (motivation on account of belonging to a specific club, or society or structures like labour unions and welfare associations); and
6. Physical stimuli (physical gratification, income, wealth generation).

A team of researchers and communication experts assessed the levels of awareness, sexual behaviours and the stage in the behaviour change process at which the two study populations were placed. The team also explored the acceptability of various approaches to promote behaviour change. The assessment and proposed strategies outlined here are based on survey results and group discussions with current IDUs, programme managers and out reach workers in Delhi and Imphal. The assessment suggests that the two groups are at different stages of the behaviour change continuum. IDUs in Imphal have higher

levels of knowledge and awareness and have been injecting drugs for a longer period of time. Thus the group is largely placed at the stage of precontemplation/preparation for action and needs to move on to action/practice. The IDUs in Delhi on the other hand appear to still be at the precontemplation/contemplation stage and need to move on to contemplation/preparation for action. Both groups would benefit from a BCC strategy focusing on skill building, utilising family and social networks and emphasising physical gains. IDUs at both sites expressed a preference for face-to-face contact with health workers and peers for effective communication.

Core Elements of the Proposed Behaviour Change Communication Strategies

Thus we propose the following broad components:

- Increased interpersonal communication and outreach activity with IDU populations, combining awareness building on sexual risk behaviours with messaging on IDU risk behaviour reduction.
- Focus on experience sharing and peer role modelling, with the creation of a cadre of peer educators who are willing to talk about their personal experiences and to undergo advanced training and sensitisation processes. Peers would also help to create and support a referral system to harm reduction and health care services. Ideally, these peer educators should be supported by a stipend or a performance based award.

- Emphasis on a reduction in the false (misplaced) sense of security or lack of risk among IDUs partly created by having incomplete information. A focus on linking the risks associated with unsafe injecting practices and unprotected sex with partners. Emphasizing self assessment of risk.
- Life-skills based activities and outreach, especially in Imphal, to address decision making skills, ability to withstand peer pressure, learning how to say no, purchasing/ accessing/using condoms on a regular basis.
- Increased interpersonal communication and outreach activity directed towards female and male sexual partners of IDU population, many of whom are not adequately addressed by existing processes, and who may neither be aware of risk, nor may be IDUs themselves and may therefore not be accessing services.
- Development of sustainable long-term interventions in schools and young people's groups creating a space for discussion of sexuality, HIV, gender and substance abuse related issues.
- Increased awareness building and sensitization activities for other secondary populations: parents, law enforcement, policy makers. For law enforcement agencies a special emphasis on distinguishing beneficiaries of harm reduction interventions from drug peddlers and promoting an understanding that cracking down may drive the population underground.
- Development of youth clubs/young people's activities based drop-in centres where young people can spend their spare time in socially relevant activities and in learning life-skills and practical career oriented skills. These could be language programmes, sports related, career orientations, entrepreneurial skills and so forth. (Delhi and Imphal)
- Collation of existing non-literacy level specific visual and audiovisual materials on substance abuse (especially IDU) and HIV, and utilization of these materials as part of an extensive and sustained outreach process: see (a) and (b).

Suggested Messaging

Some key messages emerging from the assessments are listed below. These messages would need to be further developed for a comprehensive BCC Campaign.

For primary audience: IDUs/sexual partners of IDUs

- a. If you are faithful to your partner, you will be safe from HIV.
- b. If you use a condom consistently and correctly, you will not contract STIs, HIV and Hepatitis B and C. You will also protect your partner from these infections.
- c. If you buy or obtain a condom, you will be a caring and safe partner.

- d. (For men) If you use a condom during sexual intercourse, you are a real man, because you are protecting your partner.
- e. (For younger youth) If you abstain or practice safer sex techniques (including masturbation) you will avoid pregnancies, and keep yourself safe from HIV and STIs, and Hepatitis B and C.
- f. (For older youth) If you protect yourself from HIV and STIs, you will keep your partner and/or family safe from infection and its consequences.
- g. If you understand the symptoms of STIs and/or feel you have exposed yourself to HIV infection, visiting the nearest DIC can get you medical assistance, testing, and support.
- h. If you use intravenous drugs, and share needles or syringes, you are exposing yourself and your partner to infection by HIV.
- i. If you give up your dependence on drugs, you are not only giving up a habit that is detrimental to you, you are keeping your sexual partner and family safe as well.
- j. If you keep away from drugs, you can lead a happier, safer and productive life – and be safe from HIV.
- k. If you suspect your partner may be an IDU or may be having sexual contact with other individuals, you can choose several alternatives that can keep you safe (linked to condom message, abstinence message, and IDU de-addiction message).

For secondary audience: Law enforcement/policy makers

- a. (Law maker/law enforcement) If you check the background of individuals arrested for possession of needles and syringes, you can avoid targeting individuals who are already being rehabilitated from substance addiction and you will be helping curb widespread IDU behaviour and substance abuse.
- b. (Law maker/law enforcement) If you avoid raids and crackdowns on CSW and IDU populations, you will avoid driving these behaviours underground where they cannot be monitored.
- c. (Law maker/law enforcement) If you work to promote positive and rehabilitative (or alternate approaches) to IDU and CSW activities, you will be perceived as constructive and demonstrate good leadership.

Note:

- a. This note suggests the non-gender specific equivalent of the word ‘sexual partner’, rather than discrete identification of (and thereby, separate materials for) MSM behaviour and heterosexual behaviour.
- b. The messages for the secondary audience (law makers/law enforcement) need to be incorporated into a widespread and sustained advocacy programme in the respective states, especially Manipur.

Suggested Outlets for BCC Messaging

Imphal

- Usage of new age media such as SMS and internet to convey BCC messaging to youth IDU population.
- Development of youth programming on locally popular television channels and through local language cinema (especially on region specific channels).

Both Delhi and Imphal

- Use of radio-based messaging through popular music shows, and including outreach

component that talks to IDUs in the field and shares their experience and thoughts with the listeners (conceivably coupled with a listener group model).

- Setting up of community supported young people's community radio stations that can present a forum for young people to develop and share their own content on issues they find relevant.

Development of Youth Information and Resource Centres where BCC materials can be accessed and young people can access non-judgmental counselling services and peer support groups.

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